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VOL. XIX. NO. 9.

MAY 1, 1891.

PEACE ON EARTH  
GOOD WILL TOWARD MEN



CLEANING  
IN

BEE CULTURE

DEVOTED  
TO

THE BEE

& HOME INTERESTS.

MEDINA OHIO

BY

A. J. ROOT

TERMS, ONE DOLLAR PER YEAR.

FRANKLIN, INGLETON, N.Y.



## GLEANINGS IN BEE CULTURE.

### GLEANINGS IN BEE CULTURE.

ESTABLISHED IN 1873.

DEVOTED TO BEES, HONEY, & HOME INTERESTS

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, - MEDINA, O.

A. I. ROOT, EDITOR.

ERNEST R. ROOT, - - ASSOCIATE EDITOR.

J. T. CALVERT, BUSINESS MANAGER.

**Terms.** \$1.00 per annum; two years, \$1.80; three years, \$2.50; five years, \$3.75, *in advance*; or two copies to one address, \$1.80; three copies, \$2.50; five copies, \$3.75. These terms apply both to the United States, Canada, and Mexico. To all other countries in the Universal Postal Union, 18 cents per year extra for postage. To all countries out of the U. P. U., 42 cents per annum extra.

**Discontinuances.** The journal is sent until orders are received for its discontinuance. We give due notice when the subscription expires, and further notice if the first is not heeded. Any subscriber whose subscription has expired, wishing his journal discontinued, will please drop us a card at once; otherwise we shall assume that he wishes his journal continued, and will pay for it soon. If you wish your journal discontinued at the end of the time paid for, specify that fact in ordering, and your wishes will be respected.

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**Receipts for Money.** We send no receipt for subscription money. The change of the date on the little label shows you that the money has been duly received, and credited. During December and January it sometimes takes us three or four weeks before the date is changed.

**How to Send Money.** You can send money at our risk by P. O. order, express money-order, or bank check or draft, and where none of these means are available, by registered letter. Money sent in any other way is at your risk. We pay no exchange or express charges on money. Be sure to sign your express money-order, or indorse your check or draft, if not made payable to order of A. I. Root. If you neglect this it will have to be sent back to you.

**Rates of Advertising.** On not less than 5 lines, per single insertion, and for a uniform space each issue, our rates per nonpareil line are as follows:

#### TIME RATES.

1 to 2 insertions, per line.....	20c
3 to 5 " " " ".....	19c
6 to 11 " " " ".....	18c
12 to 17 " " " ".....	17c
18 to 23 " " " ".....	16c
24 insertions " " " ".....	15c

On from 3 to 7 inches space, 1c per line *less* than above rates.

On 8 inches or more, 2c per line *less*.

On less than 5 lines space, 1c per line *more* than above rates.

#### SPACE RATES.

There are those who would like the privilege of lengthening or shortening their ad., according to the season; i. e., large display advertisements, during the busy rush, and small ads. during the dull season. We append a table of "space rates," but it should be understood that the discounts are not quite as liberal as the "time rates" above. We will sell space, to be taken out any time within a year, to be used at the option of the buyer, at the following rates:

100 lines.....	\$ 19.00
200 lines.....	37.00
500 lines.....	85.00
750 lines.....	125.00
1000 lines.....	160.00

In contracting for advertising, be sure to specify whether you wish *time* or *space* rates.

For electrotyped advertisements we will allow an additional discount of 5 per cent on both time and space rates.

A. I. ROOT, Medina, O.

### CLUBBING LIST.

We will send GLEANINGS with—

The American Bee Journal, weekly,	(\$1.00)	\$1.75
The Canadian Bee Journal, weekly,	(.75)	1.65
The Bee-Keepers' Review,	(1.00)	1.75
The British Bee Journal,	(1.50)	2.00
American Apiculturist,	(.75)	1.70
American Bee-Keeper,	(.50)	1.40
All of the above journals,		5.65

American Agriculturist,	(\$1.50)	2.25
American Garden,	(2.00)	2.60
Prairie Farmer,	(1.50)	2.35
Rural New-Yorker,	(2.00)	2.90
Farm Journal,	(.50)	1.20
Scientific American,	(3.00)	3.75
Ohio Farmer,	(1.00)	1.90
Popular Gardening,	(1.00)	1.85
U. S. Official Postal Guide,	(1.50)	2.25
Sunday-School Times, weekly,	(1.50)	1.75
Drainage and Farm Journal,	(1.00)	1.75
Fanciers' Monthly,	(1.00)	1.75
Illustrated Home Journal,	(.50)	1.35
Orchard and Garden,	(.50)	1.40

[Above Rates include all Postage in U. S. and Canada.]

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per annum, when given once a month, or \$4.00 per year if given in *every* issue.

## UNTESTED QUEENS

For \$1.00 from July 1st. till Nov. 1st.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with \* use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner or later, see rates in price list.

\*A. I. Root, Medina, Ohio.

\*H. H. Brown, Light Street, Col. Co., Pa. 7tf90

\*Paul L. Viallon, Bayou Goula, La. 7tf90

\*S. F. Newman, Norwalk, Huron Co., O. 7tf90

C. C. Vaughn, Columbia, Tenn. 9tf90

Jenkins & Parker, Wetumpka, Ala. 9tf90

E. L. Gould & Co., Brantford, Ont., Can. 9tf90

W. A. Compton, Lynnville, Giles Co., Tenn. 9tf90

\*Oliver Hoover & Co., Snyderstown, Northun-

19tf90 berland Co., Pa.

## HIVE MANUFACTURERS.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.

P. L. Viallon, Bayou Goula, Iberville Par., La 7tf90

C. W. Costellow, Waterboro, York Co., Me. 7tf90

Leahy Mfg. Co., Higginsville, Laf. Co., Mo. 9tf90

Jenkins & Parker, Wetumpka, Ala. 9tf90

W. T. Falconer Mfg. Co., Jamestown, N. Y. 7tf90



# HUBBARD SECTION PRESS, HUBBARD BEE HIVE,

And other Apian Supplies.

Send for descriptive circular.

**C. K. HUBBARD,**

Fort Wayne, Ind.

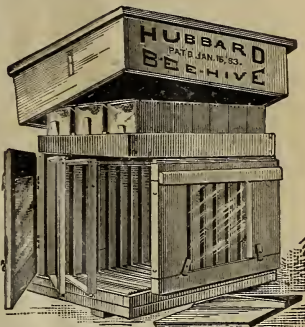
This Section Press (Pat. June 17, 1890) is far in advance of anything else of the kind on the market. It is practically automatic. Both hands can be used to handle the sections, and a slight forward push forces together the dovetailing, thus completing the sections with marvelous rapidity. Price \$2.50. Ask your supply dealer for it. Supply dealers, send for wholesale prices.

The HUBBARD HIVE has been in use 8 years, and has stood the test nobly. Trade has been constantly growing, owing to the excellent satisfaction it gives. If you are ever annoyed by the scraping and breaking of combs; killing bees when setting a frame to one side or hanging it in the hive; sagging at the bottom and getting waxed fast; shaking about when moving a hive; in short, if you dislike to pry and wrench your frames, break combs and kill bees while handling them you will be pleased with this hive.

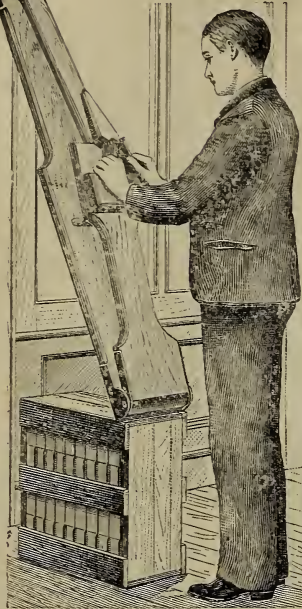
The Man Who is Willing to Work can make money fast selling these hives. \$5.00 to \$10.00 often made at it in a day. Send for Circular.

SECTIONS, SMOKERS, DADANT'S COMB FOUNDATION, ETC.

For revised "1st Principles in Bee Culture." 104 pages—the largest and best work of the kind for the price. First 68 pages contain no advertisements, but are filled with such practical information as how to divide, transfer, introduce Queens, feed, unite, stop robbing, raise honey, etc. The book receives many compliments. If you do not like it, return it and get your money.



Folding Sections a Pleasure.



☞ In responding to this advertisement mention GLEANINGS.

5-6-7-8-9-11d

## NOW, FRIENDS, LOOK HERE!

I sell the Nonpareil Bee-Hive, White Poplar Sections, Italian Bees and Queens. Price List free. Write for one. 8tfdb

**A. A. BYARD, West Chesterfield, N. H.**

☞ In responding to this advertisement mention GLEANINGS.

## TAKE NOTICE!

BEFORE placing your orders for SUPPLIES, write for prices on One-Piece Basswood Sections, Bee-Hives, Shipping-Crates, Frames, Foundation, Smokers, etc. PAGE, KEITH & SCHMIDT CO., 21-12db New London, Wis.

☞ In responding to this advertisement mention GLEANINGS.

## IT WILL PAY YOU

To Send for my Illustrated Catalogue of

## APIARIAN SUPPLIES

Before placing your orders. I have a lot of very nice No. 2 sections at \$2.00 per 1000.

**J. C. SAYLES, HARTFORD, WISCONSIN.**

8tfdb Please mention this paper.

## Western Bee-Keepers' Supply House

Root's Goods can be had at Des Moines

Iowa, at Root's Prices.

The largest supply business

in the West. Established 1885

Dovetailed Hives, Sections,

Foundations, Extractors, Smokers, Veils,

Crates, Feeders, Clover

Seeds, etc. Imported

Italian Queens, Queens and

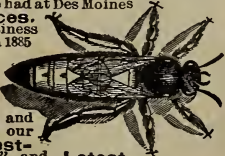
Bees. Sample copy of our

Bee Journal, "The West-

ern Bee-Keeper," and Latest

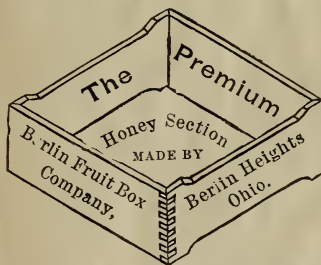
Catalogue mailed Free to Bee-keepers.

**JOSEPH NYSEWANDER, DES MOINES, IOWA.**



3tfdb

☞ In responding to this advertisement mention GLEANINGS.



Please mention this paper.

5-10db

## ONE-PIECE SECTIONS,

both No. 1 & 2; WOOD SEPARATORS and other bee-supplies. Also BERRY-CRATES, BASKETS and BUCKETS, made up or in flat. Send for catalogue. Address as in cut.

## VANDERVORT COMB-FOUNDATION MILLS.

Send for samples and reduced price list.

1tfdb **JNO. VANDERVORT, Laceyville, Pa.**

☞ In responding to this advertisement mention GLEANINGS.

## SECTIONS

\$3.00 per 1000; all kinds of bee-supplies cheap. Send for free illustrated catalogue.

**J. J. BRADNER,**

5-7-9d

**600 Lima Ave., Findlay, O.**

## SECTIONS! SECTIONS! SECTIONS!

On and after Feb. 1, 1890, we will sell our No. 1 V-groove sections, in lots of 500, as follows: Less than 2000, \$3.50 per 1000; 2000 to 5000, \$3.00 per 1000. Write for special prices on larger quantities. No. 2 sections at \$2.00 per 1000. Send for price list on hives, foundation, cases, etc.

**J. STAUFFER & SONS,**  
Successors to B. J. Miller & Co.,  
Nappanee, Ind.

6-1ftdb

In writing advertisers please mention this paper.

## Wants or Exchange Department.

**WANTED.**—To correspond with parties having potatoes, onions, apples, and honey for sale. Prompt attention given to correspondence. Consignments solicited. Prompt returns made. 19tfdb  
EARLE CLICKENGER, 121 So. 4th St., Columbus, O.

**WANTED.**—To exchange pure Brown Leghorn eggs for tested Italian queens. 5tfdb  
GEER BROS.,  
St. Marys, Mo.

**WANTED.**—To exchange fruit trees and plants now, bees and queens in May and June, honey from crop of '91, for bee-hives and fixtures in the flat. 6tfdb  
Address JOHN W. MARTIN,  
Greenwood Depot, Alb. Co., Va.

**WANTED.**—Pure Italian queens, sections, nursery stock, or offers, for pure P. Rock eggs or Quinby hive-corner clasps. 6tfdb  
L. C. AXTELL, Roseville, Ill.

**WANTED.**—To exchange comb foundation for beeswax. 7-10db  
J. S. BROOKS, Silverton, Marion Co., Ore.

**WANTED.**—To exchange brooder, corn-sheller, S. C. W. Leghorns, B. Minorcas, for road-cart, apiarian supplies, Italian bees, or offers. 8tfdb  
ELIZABETH DIMICK, Burns, Steuben Co., N. Y.

**WANTED.**—To exchange one Hall typewriter, almost as good as new, for apiarian supplies, queens, bicycle, or tricycle. Cost of writer was \$40 when new. Will give a bargain. Also have 50 bu. of Japanese buckwheat for sale. 8tfdb  
F. W. SCHAFER, Eddyville, Ia.

**WANTED.**—To exchange or sell cheap a Given foundation press with dipping-tank and boards complete; cost \$55. Good as new; \$35 cash will take it. What have you to exchange? 8tfdb  
FRANK A. EATON, Bluffton, O.

**WANTED.**—A man capable of taking charge of 125 colonies of bees; either on shares or for wages. Address  
Mrs. M. C. GENTRY, Phalia, Miss.

**WANTED.**—To exchange English Dorkings (\$5 a trio) or eggs (\$1 per 13) for pure Italian bees or queens, or offers. 8-9d  
C. W. SMITH,  
Lock Box 232, Aurora, Ill.

**WANTED.**—To exchange Supplies, Bees, or Queens for a good self-regulating incubator. 9d  
J. A. ROE, Union City, Ind.

**WANTED.**—Exchange with the "Home," St. Petersburg, Fla., and get our "mailing lists" free. 9tfdb

**WANTED.**—To exchange a "Prize Demas" lathe and scroll saw combined, for an "Autoharp," with four chords, or offers. Address  
9d S. C. SNOW, Blakesburg, Ia.

**WANTED.**—To exchange a good watch, new; also a full-blooded foxhound, one year old, for warranted Italian queens. 9d  
C. E. COOK, Starrville, Mich.

**WANTED.**—To exchange a double-case "World" typewriter, nearly new, for a small printing-press and outfit, worth from \$12 to \$25. Will pay the difference for a suitable outfit. 9-10d  
W. W. ADDISON, Mt. Vernon, Jeff. Co., Ill.

**WANTED.**—To exchange Bronze Turkey eggs and White Minorca eggs for comb foundation or sections. 9d  
J. C. PROVINS, Masontown, Pa.

**NO ICE.** Will trade milk-shake, good as new, for any thing useful. J. T. MICHAEL, German, O.

**WANTED.**—To exchange pure Scotch collie pups for tested Italian queens. 9-10d  
N. A. KNAPP, Rochester, Lorain Co., O.

**WANTED.**—Wanted to exchange medical books, such as are used in Chicago medical colleges, for a photo. outfit, size 6½x8½; also have a good telescope for exchange. Write first. 9d  
E. L. REYNOLDS, Westville, Laporte Co., Ind.

**WANTED.**—Golden queens and raspberry-roots. 9d  
M. ISBELL, Norwich, N. Y.

**WANTED.**—To exchange sections for beeswax. I will allow 35c per pound, for good clear wax, to be paid for in nice No. 1 sections at \$2.50 per 1000. 9-10d  
W. H. NORTON,  
Manufacturer of Bee-keepers' Supplies,  
Skowhegan, Me.

## Black and Hybrid Queens For Sale.

50 queens to mail after May 15. Blacks, each 25c. Mismatched Italian and Carniolan, each 50c. All good queens. Safe arrival guaranteed. Stamps taken. E. F. QUIGLEY, Unionville, Mo.

I have a few young mismatched Italian queens for sale at 50 cts. each. Mrs. A. M. KNEELAND,  
Mulberry Grove, Bond Co., Ill.

## \$1.00 QUEENS READY TO MAIL. \$1.00

Queens reared from one of Doolittle's select mothers, by his method. Orders booked now; pay when queens are received. Write for quantity prices. Safe arrival and satisfaction guaranteed. 9-10d  
JOHN B. CASE, Port Orange, Vol. Co., Fla.

## \*BEST ON EARTH\*



ELEVEN YEARS  
WITHOUT A  
PARALLEL, AND  
THE STAND-  
ARD IN EVERY  
CIVILIZED  
COUNTRY.



Bingham & Hetherington  
Patent Uncapping-Knife,  
Standard Size.

Bingham's Patent Smokers,

Six Sizes and Prices.

Doctor Smoker,	3 3/4 in.,	postpaid	\$2.00
Conqueror "	3 "	"	1.75
Large "	2 1/2 "	"	1.50
Extra (wide shield) "	2 "	"	1.25
Plain (narrow) "	2 "	"	1.00
Little Wonder,	1 1/2 "	"	.65
Uncapping Knife.....			1.15

Sent promptly on receipt of price. To sell again, send for dozen and half-dozen rates.

Milledgeville, Ill., March 8, 1890.  
SIRS:—Smokers received to-day, and count correctly. Am ready for orders. If others feel as I do your trade will boom. Truly,  
F. A. SNELL.

Vermillion, S. Dak., Feb. 17, 1890.  
SIRS:—I consider your smokers the best made for any purpose. I have had 15 years' experience with 300 or 400 swarms of bees, and know whereof I speak. Very truly,  
R. A. MORGAN.

Sarashville, Ohio, March 12, 1890.  
SIRS:—The smoker I have has done good service since 1883. Yours truly,  
DANIEL BROTHERS.

Send for descriptive circular and testimonials to 1tfdb BINGHAM & HETHERINGTON, Abonia, Mich.

In responding to this advertisement, mention

## Cash for Beeswax!

Will pay 28c per lb. cash, or 30c in trade for any quantity of good, fair, average beeswax, delivered at our R. R. station. The same will be sold to those who wish to purchase, at 33c per lb., or 37c for best selected wax.

Unless you put your name on the box, and notify us by mail of amount sent, I can not hold myself responsible for mistakes. It will not pay as a general thing to send wax by express. A. I. ROOT, Medina, Ohio.



**Bee-Hives, Sections, Comb Foundation,  
and Supplies Generally.**

## BEES *and* QUEENS.

Remember we are headquarters for the Albino bees. The best bee in the world. Send for circular and prices. Address 9d

**S. Valentine, Hagerstown, Wash. Co., Md.**

Mention GLEANINGS.

**BEES!** Yes, all the bees you want. 3000 lbs. for sale by return mail. Queen, nuclei, and full colonies. No. 1 Sections, \$3.00 per M. Comb Foundation, Honey-Ex-  
**TRACTORS,** and all kinds of thiware for bee-keepers. Don't fail to get my price list of 1891, now out. 9d

**R. E. Smith, Box 72, Tilbury Center, Can.**

Please mention this paper.

## ITALIAN QUEENS.

Progeny large, and good honey-gatherers. Prices low. Send for price list. **C. M. HICKS,**

9-11-13d

**Fairview, Wash. Co., Md.**

## WANTED!

In exchange for queens, 20 lbs. of bees, any race, but no foul brood. I will give one young tested three or **Five Banded Italian Queen** (to be sent the fore part of June), for every pound of bees sent me **now, charges paid.** If you wish queens of either strain, and can spare the bees, drop me a card, and send at once. Reference, postmaster or express agent here. Send bees at once. Address

**JACOB T. TIMPE,**

9tdfb

Exp. and P. O. Address, **Grand Lodge, Mich.**

Please mention this paper.

**J. W. Taylor's Fine Italian \* \* \***  
**\* \* \* and Albino Queens for Sale.**

Cheap tested Italian, \$1.50 each. Tested Albinos, \$1.50 each. Testeu golden Italian, \$2.00 each. Untested queens, 75 cts. each; \$8.00 per doz. I guarantee safe arrival by mail. 9tdfb

**J. W. TAYLOR, Ozan, Ark.**

## For Sale at Wholesale Prices.

One Parlor Organ, \$45.00; retail, \$85.00.  
One Wagon and one Horse, \$45.00; retail, \$90.00.  
One Barnes Saw, \$25.00; retail, \$35.00.  
Can sell only ONE of each at this price. 9-10d.

**L. L. ESENHOWER, Reading, Pa.**

Please mention this paper.

## FOR SALE.

75 colonies of Italian bees in Langstroth 10-frame, and A. I. Root's 8-frame Dovetailed hives, at \$5.00 per colony. A liberal discount on more than one colony.

**JOHN GRANT, Batavia, Clermont Co., O.**

Mention this paper.

9 10-11d

## FOR SALE.

100 L. size combs, on standard wired frames, made from foundation free from disease, at 10c each. Also a Barnes combined saw, good as new. 9-10d

**H. W. AVIS, Matteawan, Dutchess Co., N. Y.**

**A Four-Color Label for Only 75  
Cts. Per Thousand.**

Just think of it! we can furnish you a very neat four-color label, with your name and address, with the choice of having either "comb" or "extracted" before the word "honey," for only 75 cts. per thousand; 50 cts. per 500, or 30 cts. for 250, postpaid. The size of the label is 2½x1 inch—just right to go round the neck of a bottle, to put on a section, or to adorn the front of a honey-tumbler. Send for our special label catalogue for samples of this and many other pretty designs in label work.

**A. I. ROOT, Medina, O.**

## HONEY COLUMN.

### CITY MARKETS.

**CINCINNATI.**—Honey.—Demand is good for extracted honey at 6@8c on arrival. Supply is fair. The market is almost bare of comb honey, which sells at 14@16c for choice white, in the jobbing way. Beeswax is in good demand at 25@30c for good to choice yellow, on arrival.

Cincinnati, Apr. 18.

**CHAS. F. MUTH & SON.**

**ST. LOUIS.**—Honey.—Market quiet; comb at unchanged quotations. There is considerable inquiry for strained in barrels, which, if in stock, would bring 6½@6¾c. Prime beeswax, 27½c.

Apr. 20.

**D. G. TUTT GROCER CO.,**

St. Louis, Mo.

**MILWAUKEE.**—Honey.—The demand for honey is very fair, while the supply of choice section is very small, and think more than the present supply will be needed before any new crop can come. We quote choice 1-lb. sections, 18@19c; Fair to good, 1-lb. sec., 15@16; old and dark, 1-lb. sec., 8@10. Extracted, in barrels and cans, white, 8@9; dark, 6@7. Beeswax, 25@28; wanted. A. V. BISHOP, Milwaukee, Wis.

Apr. 22.

**KANSAS CITY.**—Honey.—No particular change to note in the market, only both extracted and comb are selling slow. Very little 1-lb. comb in the market. We quote 1-lb. comb at 16@18; 1-lb. dark, 10@12; 2-lb. comb, 12@15; extracted, 6@7. Beeswax.—None in market.

April 22.

**CLEMENS, MASON & CO.,**

Kansas City, Mo.

**DETROIT.**—Honey.—Comb honey is very scarce, and all grades are running short; prices range from 13 to 16 cts. Extracted, 8@9. Beeswax in good demand at 28@30.

Bell Branch, Mich., Apr. 20.

**M. H. HUNT.**

**SAN FRANCISCO.**—Honey.—Firm, but not much doing. Extracted, 5¾@6; comb honey, 1st grade, 13@14; 2d grade, 11@12. Beeswax, 26@29.

Apr. 26.

**SCHACHT, LEMCKE & STEINER,**

San Francisco, Cal.

**ST. LOUIS.**—Honey.—Our honey market is without change; fair demand. Choice comb, 15c. Very little moving. Lower grades less. Extracted, choice white, 7½@8c; amber, 6½@7. Beeswax, 27½; on order, 30c.

Apr. 20.

**W. B. WESTCOTT & CO.,**

St. Louis, Mo.

**BOSTON.**—No change in honey market here.

April 20.

**BLAKE & RIPLEY, Boston, Mass.**

### PRICE LISTS RECEIVED.

**J. T. Wilson, Pink, Ky.**  
**W. P. Meadows, Syston, England.** This latter is one of the finest catalogues we have ever received.  
**Louis Hansen, Davenport, Ia.**  
**E. Calvert, Des Moines, Ia.**  
**E. L. Pratt, Beverly, Mass.**  
**J. J. Snyder, North Lima, O.**  
**H. H. Brown, Light Street, Pa.**  
**George Rall, Frenchville, Wis.**  
We are now, Apr. 30, printing circulars for Oliver Foster, Mt. Vernon, Ia.

### CONVENTION NOTICES.

The Central Michigan Bee-keepers' Association will meet at Pioneer Room, Capitol, Wed., May 6, 1891. All are inv. ted.  
**W. A. BARNES, Sec., Lansing.**

The Bee-keepers' Association and Fair will be open May 6. Open to all.  
**IONIA, Mich.** **H. SMITH, Sec'y.**

The bee-keepers of Western Connecticut, who are interested in forming a bee-keepers' association, are requested to meet at Mr. Edwin E. Smith's, in Watertown, May 13, 1891, as early in the day as possible. A good time is expected. **E. S. ANDRUS.**

**FOR SALE** (for 1891) cheap for cash. Italian Bees and Queens. Address  
**OTTO KLEINOW, Apiarist,**  
150 Military Ave., Detroit, Mich.





# GLEANINGS

A JOURNAL  
DEVOTED  
TO BEES  
AND HONEY  
AND HOME  
INTERESTS.

## BEE CULTURE

Published by A. I. Root, Medina, O.

Vol. XIX.

MAY 1, 1891.

No. 9.

## STRAY STRAWS

FROM DR. C. C. MILLER.

PLANT POSIES for your wife.

NO NEW BEE-JOURNAL has started for a week.

THOSE REPORTS on p. 289 are very interesting.

DWINDLING in Medina makes me keep my bees longer in cellar.

ESPARCETTE, spoken of on page 279, is called the honey-plant *par excellence* in some parts of France.

THAT SKELETON hand on page 258 has one joint less on its forefinger than on its little finger. Has it been fooling with a buzz-saw?

WHO CAN TELL, with some show of authority, which is worth more for spring feeding, a dollar's worth of granulated or brown sugar?

LOCATING HIVES on the south side of a building, very properly says W. S. Pouder, in *Indiana Farmer*, "is liable to give bees the swarming fever."

PHACELIA TANACETIFOLIA is making some stir as a honey-plant in Germany. I believe it comes from California. Can any one tell us about it?

FOUL BROOD. Chas. Dadant gives, in *A. B. J.*, convincing evidence that there is no danger of foundation carrying foul brood. I've breathed easier since reading it.

DR. TINKER ought not to tinker with our spelling. "Storey" is all right in England, but it looks funny here. It's too much labour. The spelling of our language is horrible, any way.

MAPLE BLOOM, my former guide for taking out bees, is unreliable. March 30 it was in bloom here, following which was cold weather, including a snowstorm which left the ground covered three days.

WINTER CASES, on p. 289, seem to beat chaff hives. But I'd like to see them compared in a hard winter, or in a colder place than Medina. Still, if the proportion were changed, and 14 in winter cases had died to 11 in chaff hives, I'd take the winter cases.

THE PACKING-BOXES of the Oatmans, referred to on page 267, I saw last summer. Certainly not all of them had bottoms, I think. They were three stories high, making 12 hives in a pile. If I am rightly informed, they lost heavily during the last of their wintering.

THE NON-SWARMING SYSTEM met my eyes in reading. I felt curious and interested. Then I saw it advertised by Geo. A. Stockwell, and I felt glad. I sent a quarter, got a pamphlet with less than would go on three pages of GLEANINGS. I read it and felt—humbugged.

"UNIFORMITY should be the rule in sections and crates, and any departure from that rule should be disapproved and frowned down." That's what the *A. B. J.* says in an editorial inviting a full discussion of the subject. Brother Newman, you've struck a good note.

COARSE WIRE CLOTH over entrances in winter is approved (p. 266) by Bro. Potter and the editor. Why, bless you, don't you know that I am with you, friend Root? I even go further than Bro. Potter, and have my wire cloth so coarse the bees can go right through it.

JOHN SMITH, in *Nebraska Bee-keeper*, doesn't believe in "fixed distances." He says: "I can set my hives near or far apart, and it doesn't matter to other folks either. If they don't like the looks of my yard as I fix my distances, they can go and fix their own distances in their own yards."

A NEW PROJECT is on foot in England to start a bee-paper. A stock company is to be incorporated with a capital of \$50,000, in 10,000 shares of \$5 each. Among the movers are J. Hewitt (a Hallamshire bee-keeper) and T. Bonner Chambers, of Sheffield, where the paper is to be located.

COOKING EGGS, as given on page 282, is good. Here's the way our folks do. Pour *boiling* water on the eggs, at the rate of a quart to a half dozen; *cover*, and set on the reservoir. In 10 or 15 minutes the yolk will be done soft, and longer will make it harder; but the white will not get hard in all day. It doesn't need such close watching as your way, Mrs. Axtell.

STARTING SEEDS, particularly fine seeds, in boxes. Bake the soil to kill weed seeds. Fine it, level in box, lay seeds on top, sprinkle fine soil over, just covering the finest seeds; lay brown wrapping-paper flat on it, and keep always a little moist. The paper holds the moisture, and prevents the seeds washing out when watered, besides the other good it does as a covering.

ROBBERS sometimes clean out a weak colony in spring. Whatever you do, don't take a hive away that the robbers are at work on. If you do, they'll only attack a neighboring colony. Take most of the contents out of the hive, but leave at least one comb with a little honey to finish. If you must take the hive away, put another in its place, with something for the robbers to work on.

PIPING of the queen, says Henry Alley, "is made by the rapid vibration of the wings before the queens leave the cells." He should have added, that the sharpest piping is made by the young queen at liberty. Wouldn't it be best to continue the old-fashioned way of saying that the queen at liberty "pipes," and the queens still in the cells with the coarser voices "quahk"? Cheshire says the wings have nothing to do with the piping.



REQUEENING. Alley says, in April *Apt.*, "It will pay to requeen colonies each two years." Rambler says, in same *Apt.*, "When a honey-producer advocates the requeening of all his colonies the second year, it seems to be an evidence of the inferiority of his system of queen-rearing and of his queens." That's rough on Alley, but he has lots of good company on his side, and I guess he can stand it.

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## GENERAL CORRESPONDENCE.

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### THE CAUSES OF SWARMING.

DADANT TELLS US WHY HE PREFERS LARGE HIVES.

About 40 years ago a friend of mine told me that he had seen a swarm settling on a rock in a waste land, about half a mile outside of the city in which I lived in France. It was at the beginning of April, and had I not known my friend as unlikely to tell lies I would have thought that he intended to make an April fool of me. After finding the swarm I covered it with a hive, and the next morning I brought it home. My business prevented me from looking at it before evening, when, to my surprise, I saw that most of the bees were gone, and that the few hundred which had not followed the others were unable to fly. They were starving. Then I concluded that this colony had deserted its hive for want of food; and this view was confirmed by several other similar experiences. On a Sunday afternoon, while glancing about my home apiary, I saw the alighting-board of one of the hives covered with fighting bees. The ground in front of the hive was already covered with dead ones. I stooped down, and racked my brain to find an explanation of the fact, for I had never seen anything like that, when, on a sudden, a lump of bees larger than my fist dropped on my hat, and thence slipped upon the fighting bees. Raising my eyes I saw a swarm suspended under the limb of a tree just above. These bees were so weak that they were unable to cling together, and were killed by the bees of the hive in front of which they had fallen, little by little, in small bundles. I procured a hive into which I shook the swarm. They took the food that I gave them, and, after having regained strength, they departed. Had I given them one or two combs containing honey and pollen they would have stayed.

I have seen several colonies deserting their hives for want of honey, and especially of pollen. I returned them after having attended to their needs, and they were happy to stay. I have seen, also, bees deserting as soon as they were brought out of a cellar which had been too warm. For several weeks these bees had been anxious to have a good flight; their hives had been for them a prison, and they availed themselves of the first chance to depart.

All these occurrences, showing that bees swarm to find better abodes when they are dissatisfied with the circumstances in which they are, induced me to investigate the causes of natural swarming, which, so far, had been considered as a natural impulse given to bees in order to replenish the earth.

As bees generally swarm when their hives are full, the first thing to be considered was whether the lack of room was not the cause of swarming, especially as it is well known that bees in small hives swarm more than in larger ones. Now, the question arose: "How much room is needed to accommodate the most pro-

lific queen?" For several years I kept an observing-hive, and had noticed that a good queen can lay about six eggs per minute, or 360 per hour. If we suppose that she lays half the time, or 12 hours in 24, we have 360x12, or 4320 eggs per day, during the best time of the season.

A well-known German bee-keeper, Mr. Von Berlepsch, having hived a swarm on empty combs, counted the eggs laid by its queen during the first 24 hours, and found a few more than 3000. But, having probably considered this number as unusually large, he did not draw any inference from it, for he did not enlarge his small hives. Yet, since a queen taken at random can lay 3000 eggs to-day, I can not see why she did not lay the same number yesterday, or why she will not lay as many tomorrow, if the circumstances have not changed. To verify whether a queen is able to lay 3000 or more eggs per day for several weeks, it is indispensable to give her colony a number of cells sufficient to receive her eggs for 21 days, besides the cells containing the provisions of honey and pollen.

I had several large hives built to produce comb honey in small boxes placed at both sides of the brood, after the idea of Jasper Hazen. I resolved to use them for my experiments. These hives could accommodate 14 Quinby suspended frames, 18x10½ inches inside; and my enlarged American hives could accommodate 16 frames. I filled these frames with worker combs and watched the results. We have these hives yet in our home apiary. I soon ascertained that these hives were too large, even for my best queens, whose laying, during the best seasons, exceeded 4000 eggs per day for 21 days, and I concluded that a Quinby hive, with 10 frames and a partition-board, would be sufficient. These 10 frames, containing 104,500 worker-cells, can accommodate the laying of from 3500 to 4000 eggs, leaving 20,000 or 30,000 cells for the provisions. All the Quinby hives that we have made since have 10 frames and a partition-board. These hives are larger than a 12-frame Langstroth; yet, every year, when the white clover begins to bloom, nearly every one of them is full of brood and of bees, ready to bring honey into the upper story, or to swarm, if we delay, even for very few days, the enlarging of the room.

In the spring of 1889 we had put our upper stories on the hives, as we usually do in the last part of May; but the bees, for a week or more, did not bring any honey, when, the wind having changed, we noticed a booming in the apiary. Two days after, although we had raised their hives from the bottom-boards, several colonies were gathered outside of their hives. Their upper stories, containing each about 50 lbs., had been filled in less than three days. We hastened to put a second story under the first; yet some swarmed — dissatisfied, doubtless, with these large hives which had proved too small to receive their daily crop. As it was impossible for us to enlarge the space in our six apiaries on the same day, we had an unusual number of swarms, 15 or 20 per cent. if I am not mistaken; more in our Langstroth hives, and such swarms! One of them was so large that we had to give it two upper stories on the evening after it was hived. The bees in these large hives were therefore as much crowded as a colony in a small hive; for it is not the size of the hive which excites the bees to swarm; it is the comparative narrowness of their abode; it is the lack of empty cells to receive the harvest and the eggs of the queen. When the honey comes in slowly, the enlarging of the room with empty frames may suffice; but when the crop is very abundant, as the workers do not like to



remain inside to build combs, while the nectar abounds in the fields, they swarm.

Most bee-keepers think that our hives are too large to raise comb honey; furthermore, a great many have reduced their Langstroth hives to eight frames. But when we made our experiments, the extractor was not yet invented; and for several years after its invention, as extracted honey was difficult to sell, we raised comb honey, in small boxes first, then in 3-lb. Adair sections; and our crops were not smaller in quantity than those of bee-keepers using smaller hives, whose apiaries were in the same location as ours.

One of the advantages of large hives is, that their queens, during the summer, have a great many empty cells in which they can lay, and the workers a large space in which they can lay up a quantity of fine summer honey for winter.

I know that both these propositions are in direct opposition to the new doctrine which advises the bee-keepers to contract the brood-chamber so as to stop the laying of the queen, and to compel the bees to bring all their harvest in the sections; but I know that our crops, even when we raised comb honey, gave us more profit with less work, and fewer chances of loss, than the narrowing method to its partisans. A queen, from July to August, can lay very little in a small hive; and as the workers do not live, on an average, more than 35 days during the working season, the number of bees is very much reduced in the fall. When winter comes, the population, which is small, suffers proportionately more from the cold than a larger one. In spring the bees are slow in recovering a number of workers sufficient for the harvest, and their owner is compelled to narrow up the brood-chamber to force them in the sections. Thus the advocate of small hives turns in a circle. His colonies are small in winter and spring, on account of his summer contraction; then he is compelled to contract his hives again to get a crop. On the contrary, not only the queens in our large hives are not hindered in their laying; but the workers have a large room in which they lay up an abundance of the best provisions. Then the population well fed, able to keep well warmed, coming out in spring numerous and healthy, fill their hives with workers ready for the honey-harvest.

A successful Italian bee-keeper, who was converted to the large hives by my writings, wrote, last year, in *L'Apicoltore*: "To obtain good crops of honey you should prepare your colonies during the preceding summer." Contraction does just the reverse. Our experience on the question of the size of hives continues the same. In our Lamont apiary (see GLEANINGS, January 15, page 60), we have about 30 large Quinby hives and 23 ten-frame Langstroth. Last October all our Quinby hives but three had sufficient stores for winter, while 19 of the 23 Langstroth had to be fed. Yet we did not take an ounce of honey from their brood-chamber in summer. For several years we had intended to transfer their colonies to Quinby hives, and we have resolved to do it this spring.

But, to return to my subject: Natural swarming can be caused, also, by the death of the queen during the honey season. Then the workers, if they have eggs or young larvæ, raise several queens; and the first hatched, being hindered by the bees from killing her rivals, is dissatisfied, and goes out with a swarm. This swarming we designate as a "primary swarm with young queen." Such swarming with young queens amounts, on an average, to two or three per cent of the number of our colonies. It shows that it is impossible to prevent natural swarming completely, unless you watch your

colonies to prevent them from replacing their queens during the honey harvest; but it confirms my theory, that swarming is always caused by the uneasiness of the bees.

Hamilton, Ill., Apr. 16. CHARLES DADANT.

[Friend D., I am well aware there are many things to be said in favor of large hives; and where one works for extracted honey, as you do, I rather think I should prefer them. As this large amount of room is needed, however, during only a part of the year, there are some very good reasons for enlarging, when needed, by an upper story; and if we do this, it behooves us to have our frames rather shallow. This is why Langstroth decided on the frame he has. Using ten combs below and ten more above, we have a hive about as large as most bee-keepers care for, and it comes in good compact shape, pretty nearly a cube. It is true, the boys have of late very strongly favored an eight-frame hive; and for comb honey, where we wish to oblige the bees to put all the surplus into the boxes above, an eight-frame hive may not be so bad. And, again, for those who sell bees and ship whole colonies, eight frames are about all that is really necessary to ship and pay express charges on. I have for years noticed that bees do swarm, both in season and out of season, when their home is not to their notion. I have seen nuclei desert their hives, apparently because they were pestered by a nest of ants. I have seen them do it, also, when I could see no other reason than that the entrance had been carelessly left too small for them to go out and in comfortably. They swarm out when the hive is overcrowded, when out of stores, and in glass observatory hives when they have too much light, or if the sun makes them uncomfortably hot, etc.]

### UNITING WEAK COLONIES.

#### DOES UNITING PAY DURING SPRING DWINDLING?

On page 290 of GLEANINGS for April 1st I see that some spring dwindling is experienced at the "Home of the Honey-bees," and in this connection I see that the editor advises uniting weak colonies which have the "spring dwindling," unless the weather is warm and pollen is abundant. This is going back to the plan of the "books" on bees of years ago, where they told us the time to unite was when it was discovered that any two colonies were too weak to be of use alone. There is no question but that the uniting of two weak colonies to make one strong one is profitable to the apiarist; still, that uniting must make the *one* better than either of the *two* would have been when the honey harvest arrives, or our labor of uniting is worse than useless. That the uniting as proposed by the editor does not, as a rule, make the united colony better at the end of three weeks than each would have been if left separate, is why I object to the advice there given. Years ago I experimented along this line to my entire satisfaction, and I have put as many as seven such "spring-dwindled" colonies into one hive, the seven making a good rousing colony at the time, and in a month all were dead; while some, no stronger than some of the best ones put into this hive, which were left separate, pulled through and built up into colonies. The idea seems to be, that, where two or more such colonies are put together, the bees seem to think that they can do something "big," and so work themselves up to great activity in starting a large lot of brood, which wears out the little vitality there is left in them before enough young

bees hatch to take the place of those wearing out daily; hence all perish; while, if they had been left to themselves, they would have been less active, the few young bees which hatched would have taken the place of those which died, and, when settled warm weather came, the few young smart bees which were in the hive at that time would and could care for a large lot of brood in proportion to their numbers, so that the colony would build up for the next winter if nothing more. I once had a colony get so low in this way that there were, by actual count, only eighty odd bees the fore part of June; and yet this little colony, without any assistance from any other colony, built up into a good colony for winter, and gave two of the large old-fashioned sections of nice sealed buckwheat honey. Dr. Miller and several other of our best beekeepers have reached the same conclusions regarding uniting spring-dwindling colonies that I have, if I am not mistaken. By confining these small colonies to as few frames as they can cover, and building them up as fast as possible when it comes warm weather, and then uniting them just before the honey harvest, has given me splendid results in honey, as I have given in back volumes of our bee-papers.

#### LARGE SWARMS TO PREVENT SWARMING.

I see Mr. Robbins, Mr. Dayton, yourself, and others are discussing the swarming question, along the line of large hives, etc., you claiming that it is the large hive used by the Dadants and Bro. France which give them so little swarming. Now, it seems to me that, from the light of the past, no one can deny that your position is right; for, away back when our lamented Quinby wrote his "Mysteries of Bee-keeping Explained," he told us that a hive of 4000 or more cubic inches filled with comb was almost an absolute non-swarmmer, bees staying in such hives for years without swarming. I quote from memory, and have not tried to get the exact words. No one, so far as I know, has any trouble, to any extent, with swarms when working for extracted honey, which working always demands a large amount of comb space, if we are to have the best results. But the real point at issue, as I look at it, lies in the fact that no best results in *comb honey* can be secured and use a hive containing from 3000 to 4000 cubic inches in the brood-chamber, or that amount of space filled with empty comb in early spring. Quinby told us that a 4000-cubic-inch hive filled only a third full of comb the previous season, would just as surely give a swarm before more comb of any amount was built, as would a hive filled with comb one-third this size, and this brings the thing down to just where we find it in working for comb honey. We have the small hive filled with comb, and the sections without comb; or, if you please so to term it, a three or four thousand-cubic-inch hive, one-third of which is filled with brood-combs and the rest with sections, in reality empty as the bees view it, and swarming is the result. Should we fill our 2500 cubic inches of section room with sections filled with empty comb, on the "continuous-passageway" plan, we should not have any swarming. But, alas, we do not wish to do this, for reasons too numerous to mention here, and so it comes about that he who works for comb honey must expect to have swarms; and, if I am correctly informed, the Dadants and Mr. France are as subject to them as any of the rest of us with the few bees they work for comb honey, whenever they work for the same. The trouble seems to be, that we sometimes confound the working for comb and extracted honey, so that the reader is perplexed to know our meaning. If my memory serves me rightly, I have never had more than three swarms from

all the colonies I ever worked for extracted honey with my small brood-chambers; and years ago I produced extracted honey by the thousand pounds. A non-swarming hive for comb honey is a desirable thing, but something not yet brought about. G. M. DOOLITTLE.

Borodino, N. Y., April 15.

[Friend D., I have had just the same experience you have in putting a number of sick or diseased remnants together. At other times I have surely saved weak colonies by uniting. Where one has quite a few bees, and no queen, and the other has a queen but not the bees, it will surely pay to unite them, and we may often discover weak colonies that may be united with queenless ones; for during dwindling, queens have a way of disappearing suddenly, as well as bees.]

#### SWARMING AND THE HONEY-HARVEST.

HOW MAY WE GET THE MOST HONEY WHEN BEES SWARM DURING THE HONEY SEASON, AND KEEP DOWN INCREASE AT THE SAME TIME?

Does swarming during the honey-flow necessarily diminish the quantity of surplus gathered? that is, can we get as much comb honey as we could if they would work right on without swarming? I think I can, but it is not as easy to tell *how* to do it as it is to tell *how* not to. When a swarm comes off, hive it in a full-sized brood-chamber, and set it on a new stand. When the lower story becomes full, put on empty surplus arrangements. Let the unfinished sections on the old colony remain there. Hive the after-swarms, and treat them as you do the first ones. The chances are that the sections given the new colony will be finished long before those on the old stock, and very likely the latter will never be finished at all. Just follow up that system, and I promise you will get less than half a crop; and if the season is a very short one you will get little or nothing, when I may get a very fair return.

I would rather my bees would not swarm very much, because of the watching and labor involved. But they will swarm, and that right in the midst of the honey harvest, as I presume is the case wherever clover is the principal source of supply. And as I can not prevent it, I have been driven to study and practice methods to overrule it and the effects thereof. I have been so successful, that, so far as the quantity of honey they will give me is concerned, I would as lief have my bees swarm as not; and at the same time the increase in size of my apiary is very moderate.

A swarm of bees embraces much the larger share of the field bees of a colony, and are, in fact, mostly of that class. Quite a sprinkling of bees of a younger age are, of course, present; and, when hived on the old stand, that number and the number of field-bees will be somewhat augmented. All this, together with the fact that being thrown out on their own resources appears to give them an added incentive to action, puts them in the very best condition to make every lick count. They will accomplish more then for a while than at any other period.

I hive my swarms on some old stand, of course. The original purpose of that was to prevent after-swarms; but it becomes, in fact, but one of its two principal purposes. The other is to get as large and permanent an available force of workers in the new colony as possible. I consider the stock from which a swarm has issued as virtually of no account for comb honey the rest of that season. If they swarm



again they are of but little use, and they are worth no more as a colony if means are pursued to prevent swarming. Hence I want to get all the bees I can into the swarm. I then shall have recruits there to take the place of the old ones as they drop off. But in place of setting the new swarm on the old stand, I carry it to the stand of some other colony that has lately swarmed, or that of some weak colony. In either case I set the displaced colony down beside it, with the entrance turned at right angles to it. I adopted this method in the effort to prevent absconding of swarms. Now, please do not laugh at me, but I do believe that bees look up a location before they go off. From the evidences, I think this is often done, if not usually, after the swarm issues. While I find the expedient does not always prevent them from coming out of the hive where they are put, so far in the two seasons I have practiced it, none have shot right off for the woods. Removing the swarm to another stand gets them where the prospectors can not find them to lead them off.

Having disposed of the swarm, I remove the case or cases of sections to the new colony. If the swarm is very large, or the cases pretty well filled, I put on an empty case underneath.

The size of brood-chamber into which we put our swarms is an important item. My verdict is emphatically for contraction. I am troubled much with absconding of swarms; but while I have suspected, I can not find any good evidence that contraction has any thing to do with it. I generally hive on five frames, with foundation starters. I have not tried frames filled with foundation enough to know whether that would affect the honey-yield. Hutchinson has tested both methods, and he says use only starters. Wired frames and full sheets have objectionable features to me. I like my system—contraction—so well that I should be very loth to give it up after six seasons' practice.

The above I believe to be in detail the two great essential principles of the only profitable system of comb-honey production where swarming must take place during the honey-flow. For me, swarms thus treated give as much honey as colonies that do not swarm at all—the latter, however, being greatly in the minority.

Now, what do I do with the old colony? Well, if I do nothing else with them I remove them in a few days to another stand, or set them on top of another colony. I take a great many of them to pieces, and use them by frames to form nuclei, or to build up other nuclei or weak stocks. But more than any other one thing, I carry the frames or hives to the upper story of some other colony, and run it for extracted honey. I find it necessary to raise honey in both forms to supply my trade. But I keep very few empty combs for that purpose. I think it much better to do as I have stated. It keeps down increase to some extent, and I get a benefit of the combs I could not otherwise. I confess it is slower work to uncap these combs, as the surfaces are more or less uneven. Sometimes I unite two old colonies, after a queen gets to laying, by shaking the bees off one set of combs on to the other hive, then put on sections when there is a pretty good prospect of getting something from them. But more often I go through these old colonies some three or more weeks after swarming, and extract the honey from all combs half or more full, and they have usually gathered considerably by that time.

After the clover harvest is over and the surplus cases are all off, I take out the dummies and fill up with frames from these upper stories, nuclei, and old colonies that I have yet left intact. The bees then have full breeding capaci-

ty, and room to store honey for winter. And, by the way, I can not see but that my bees winter as well on fall honey as that gathered early in the season. I unite more or less in the fall, as conditions seem to demand it.

#### CLOSED-END FRAMES; WHY NO BEE-SPACE IS WANTED BACK OF THEM.

Ernest, on page 211, hardly states just the reason why I want no bee-space back of closed-end bars. It is simply this: I do not want them there when manipulating frames. They are of no use there, and they are a nuisance. In removing hanging frames, especially with one hand, it is a wearying effort, when a hive is pretty full, to avoid crushing bees, and then I can not always do it. One end is pretty apt to be heavier than the other, and then they will not hang even; and even if they would, to raise or lower a frame in exactly the right line to retain the true bee-space is the hardest matter of all. Now, if I can just slide the end along the end of the hive, especially if one end overbalances the other very much, it makes it more easily and quickly done.

#### COST OF TIN AND ENAMELED-CLOTH HIVE-COVERS.

I have just been figuring up the relative cost of the two styles. I find that, exclusive of paint, the enameled-cloth covers will cost about 3¼ cents, and tin about 6½ each, aside from freight charges. The former will take more paint and more time to fix, which may make it cost from ¾ to ½ of the latter. In addition to that, paint will not adhere to tin or any other very smooth non-porous surface very well; whereas, spread on the wrong side of enameled cloth it is a fixture, making the latter much more durable. Still, I have not actually tested tin. In the main I have nothing over my covers, just because I do not need any thing.

GEO. F. ROBBINS.

Mechanicsburg, Ill., Mar. 23.

### FLOATING APIARIES.

#### FURTHER TRIALS OF THE SCHEME, AND THE RESULTS.

Several facts in regard to the ups and downs (especially the *downs*) of migratory and non-migratory bee-keeping have recently come to my knowledge that may be of interest to those inclined to try the experiment of obtaining more than one crop of honey in one season. Some time in December, 1890, friends Stevenson and Deemas, of near St. Charles, Mo., started with about 125 colonies of bees, mostly Italian, in excellent hives, and well equipped for gathering a fine crop of honey, and increasing to any desirable extent, with some imported and Doolittle queens, for New Orleans or vicinity, on the steamer City of Baton Rouge. By the way, that is the very boat on which I, on several occasions and on different trips, shipped from 300 to 400 colonies of bees at a time from New Orleans to St. Louis. On the way the steamer struck an obstruction, and boat and bees went to the bottom, our bee-friends barely escaping with their lives. I sincerely sympathize with our unfortunate friends, for I have been through the mill myself, and know just how it is and how they feel: for, among other great losses, one of these same Anchor Line boats was the cause of the loss by fire of nearly 300 two-story Simplicity hives filled with fine Italian bees, with 20 frames to each colony. Nothing daunted they procured a fine lot of about 150 colonies of bees from friend D. McKenzie, of Camp Parapet, La., and took them to a point on the



river, at or very near the same spot where Perrine, of Chicago, once had a large apiary. The prospects for a good crop of honey were fair, when, a few days ago, a break occurred in the levee from the great pressure of the high water. A crevasse was formed, and it was with difficulty that our friends saved their bees by hastily moving them to the levee. Of course, their prospect for a crop of honey now is a very slim one, with water from 5 to 15 feet deep for miles in every direction around them, and they will certainly have to move the bees to some other locality, and quickly, too, involving more labor and expense, if they expect to get any honey down there this spring.

Some of your readers may remember that, in a former article, some time ago, I mentioned friend E. Stahl, of Kenner, La., as having 1000 full colonies of bees, in one yard, and as having secured a large crop of honey from them. Well, it seems that the flowers down there last fall, while blooming profusely as they do up here quite frequently, yielded no honey; and the result is, that friend Stahl (so I am informed) has lost 800 out of 1000 colonies, by starvation. This is a good illustration of the uncertainties of migratory bee-keeping; for had any one taken several carloads of bees (as I once did) down there, prepared to secure a big crop from the fall flowers, he too would have had to feed his bees to keep them alive (at a loss, of course), or let them starve, as friend Stahl did; and let me say that this is one of the snags that our bee-friends, who favor migratory bee-keeping, will run against much more often than they think for.

As regards friend Stahl's loss, from which I know personally of him he will not care greatly, he will simply cut the combs out of the frames (not try to save them from moths, and fill them with bees again as we would do up here) and render them into wax, and stack hives and frames away (to use again), and in an incredibly short time have them all roaring with bees again; for if there is one man in the extreme south who understands southern bee-keeping, and understands how to make it pay at the least cost of material and labor, and who is always enthusiastic in regard to bee-keeping, and seldom discouraged, that man is (as I knew him) friend Stahl.

E. T. FLANAGAN.

Belleville, Ills., March 28.

### REARING QUEENS UNDER THE REGULAR BROOD-NEST.

ANOTHER HAS TRIED IT, AND FINDS IT WORKS.

I have reared a number of fine queens this spring, under similar conditions to those given by Dr. Miller, on page 270. To explain more fully, I will state that I use a two-story eight-frame hive for a brood-nest up to the time our harvest comes, when I contract to one section by means of a plain zinc queen-excluder, and at the same time raise the upper story and place between it and the lower one a set of empty combs or frames of foundation, always seeing that the queens are below. Now to the point. This spring, not having enough queen-excluders to go round, I placed upon some 18 or 20 colonies a case of partly drawn sections (left over from last year) between the two upper stories and the brood-nest below, thinking this would cause these sections to be filled quickly, and also discourage the queens from going above. I was right as far as getting the sections filled; but about half of the queens went up and established their brood-nest in the upper stories, and in all these cases the bees built from three to a dozen queen-cells below. Most of these I

removed and saved, but left one cell in each of five or six colonies, and in due season I found laying queens in these; and it was surprising to see how quick they filled those eight combs with brood. At this point queen-cells were started. So I removed this lower brood-nest and placed it upon a new stand, giving it a case of empty combs, and in the course of a week those new colonies were in good shape to store honey. Now, all the while these young queens were below, the old ones were doing good work above. You may be sure this gave rousing big colonies just when they were needed; but during our orange bloom it set in to rain, and kept it up steadily for two weeks, which caused us to store two-thirds of our crop from this source. During this rain, these large colonies built from 12 to 15 frames of nice combs from one-inch starters, and also managed to store an average of 25 lbs. of honey each, while average colonies built only from 3 to 4 of combs, and did not get any surplus honey. I should have mentioned above, that these large colonies were in hives tiered four stories, besides the case of sections mentioned, and that the combs were built in the upper stories, and also that they would average about 25 per cent drone comb. This is doing well considering the conditions they were built under just before the swarming season. The queens were about one year old, part Italian and part hybrid.

Huntington, Fla., April 5. A. F. BROWN.

### SAFEST METHOD OF WINTERING.

#### CELLAR PLAN PREFERRED.

*Mr. Root:*—I have been very much interested in reading the opinions of many of your subscribers as to the best and safest way of wintering bees, and I will not undertake to say which of the many are correct, as the locality may have something to do with their success. It may be well in large apiaries to experiment and test the different plans recommended, as the loss of a few stands to them would hardly be noticed, while the beginner in experimenting might lose all, or so cripple his business that it might take years to recover.

It might be advisable for beginners, and those having a limited number of stands, to retain the old and tried methods until they become satisfied that a change will be more satisfactory, taking into consideration the climate, location, and length of winter, which should be carefully studied. In this latitude and locality, cellar wintering has given the best results. I have wintered in the cellar for eight years successfully, and at no time has the loss exceeded ten per cent, while the average would fall far below. One year ago I tried the experiment of wintering nine stands outdoors in single-walled hives packed with chaff and straw, and well protected from the winds by a grove on the north and west. All went into winter quarters in splendid condition, with plenty of stores, and in the spring only one stand was left to tell the tale of outdoor wintering in this locality. Those wintered in the cellar came out in splendid condition, without the loss of a single stand.

Last year, Dec. 2, I put 30 stands into winter quarters in the cellar, all in fair condition, while some were in the very best condition. My loss was one stand. Twenty-nine stands came out of the cellar in good condition April 6th, and to-day are gathering pollen from the maple and box-elder.

My plan has been to place the stands in the cellar in the same condition as when prepared for winter, leaving the cushions and covers on. As soon as they get settled down a little, remove

the cushions and covers, leaving the hive entirely open at the top, and the entrance open the same as in the summer, with bottom-board left on, and leave them in this condition until about two weeks before time to take them out in the spring, then replace the cushions and covers.

Your plan of removing the bottom-boards only may be equally good, but I doubt whether you will have very much better success in wintering: yet your plan will allow a greater number of stands to be wintered in a smaller room, on account of being tiered up. In leaving the hive entirely open at the top, it allows the steam or animal heat to pass off, while the plan of having the cover remain on the hive would, it seems to me, have a tendency to create moisture on the under side of the cover, consequently dampness in the hive. I observed this by placing a piece of burlap on the hive after removing the cover, allowing it to remain for several days, and then on removing it I found that it was wet; but whether the moisture came from the bees or from the cellar, it matters not; it would have the same bad effect on the bees. The old saying, "Never swap horses in the middle of the stream," holds good with me in this case until another plan proves equally successful.

N. H. BELL.

Wahoo, Neb., April 9.

### NUBBINS.

PROF. COOK GIVES US SOME VALUABLE THOUGHTS.

Friend Root, please do not call my brevities "Stray Straws." It does me too much honor, and our dear friend Miller injustice. Just dub my dribblets plain nubbins.

Glad to hear what Dr. Miller says of melilot, as demonstrated in France, especially as we are going to give it a big trial at the station here. We are going to test its value for honey, for food, green and dry, and for silage. We are also going to test rape along the same lines.

I must say that I am with Bro. Newman on the editorial "we." Dr. M., you know what the good Quaker said to his wife—"My dear, everybody but thee and me is peculiar, and I sometimes think thou art a little singular." Now, when the doctor assaults universal custom—in other words, attacks essays at conventions on this "we," he is certainly the singular man. "*Honest Injun*," doctor: isn't it suspicious when you and I are the only ones in all the great human family who are right?

Friend Cornell is usually about right, but, without doubt, drew it too fine when he was going to have foundation sow microbes broadcast. Long experience says, "No, no."

You ask what I think about bees disliking red. If it is true, I should say it is a case of bee-taste. I say, *if true*. I have a friend who wears a red shirt habitually in working with bees, yet rarely ever gets stung. I had always supposed that bees were indifferent to color, though much annoyed by any roughness like fuzz on rough woolen cloth. I have heard it said, that bees dislike dark colors. I never could see that my bees objected to my dark clothes, unless rough and fuzzy. Why may not bees have taste? I like to see a girl, if a bright brunette, dressed in bright red; if a blonde, in light blue; so, as I have taste in such matters, far be it from me to deny a like peculiarity in bees. Sir John Lubbock's experiments plainly show that bees can distinguish colors, and what observing bee-keeper doubts it?

I don't wonder, friend Root, that you hesitated at the snake-story. But I have seen it, and

so know that young "saugas" do run for protection into the maternal mouth. You ask about the breathing. I think snakes can manage for some time without breathing. In our own case I do not suppose cessation of breathing would be fatal till the heart should stop beating, which, with us, is in a very brief time. Not so the snake. I have known a snake's heart to beat for hours, even after it was taken wholly out of the body. Insects are like snakes in this respect. They will live a long time in a very small close box. I never looked in to see where the snakes went to, but I suppose they went to the stomach; indeed, some years ago some of our students killed a massasauga, and actually reported finding the young snakes in the mother's stomach. I feel quite certain that I have seen more than a mouthful run into this opening.

I always supposed that the very low gentle hum of bees in winter was only a note of "all right;" but a louder one, a murmur of "too close, more ventilation." I have often quieted bees by opening the door on a cool night.

Mr. E. France makes a good suggestion regarding wax secretion. I shall try some experiments to prove or disprove his theory. In case of Mr. Doolittle, I do not think the facts are with him. Bees often do go loaded with wax when swarming; but may they not have remained quiet before? we know that they do rest somewhat before breaking up the old home; and surely if hived on full combs, the wax scales disappear at once. I doubt whether Mr. Doolittle has the truth on his side.

Why does our usually correct friend speak of the scouts looking up a new home while the bees are clustering? As I state in my Bee-keeper's Guide, I think the bees cluster to give the queen a rest after trying her wings, which are unwonted to labor. I supposed it settled, that bees look out a home before the swarm issues. They certainly do sometimes; and if so, I guess always.

Mr. Cowan is usually very accurate; but is digestion separating the food? I should say digestion is rendering food capable of being absorbed, and that absorption did the separating. I wish to say, as I do say in my last edition of Bee-keeper's Guide, that Cowan's book is very excellent, and, I believe, *very correct*.

Friend Root, don't misunderstand me regarding granulated sugar for winter food, I believe, that, if fed in the fall, it is a superb food for bees. In this case it is digested, and is probably equal to any honey, and superior to much honey as a food; but I don't believe that it is a good food for bees, if fed exclusively while bees are in confinement, either in summer or winter. I think your experiments should be more extensive before you speak *ex cathedra* on this point.

Our bees wintered nicely on a diet of almost exclusively fall honey. Yesterday, Apr. 17, they worked in full force for the first time on soft maple. They got the first pollen April 13.

Ag'l College, Mich.

A. J. Cook.

[I am very glad, friend C., that you are going to test rape and melilot. Tell me when they are furnishing honey to the best advantage, and I think I shall be along to see it. See article on page 360, in regard to melilot and alfalfa.—It occurred to me, too, that, if that red ribbon had been a little fuzzy, or if the bees found some stray ravelings, the latter might have accounted somewhat for the number that pitched into it. Yet I think the color *must* have had something to do with it.—Thank you for the instruction on just the point that seemed so strange and astonishing to me about the snakes when they were swallowed. How long did these young saugas stay in the maternal mouth? If



you can not answer, I wish some reader of GLEANINGS would, at the first opportunity, test the matter, watch in hand. Now, please do not think me irreverent if I suggest that, in our recent studies about Jonah, I kept wondering how life was preserved when absolutely deprived of air; and is it not a little queer, that, in so many of these Bible miracles, we sooner or later find something somewhat parallel in the present existing order of things? These snakes stopped breathing, at least for a time. Well, when snakes go under water they also stop breathing—that is, they stop *one* kind of respiration.—While dictating the above, a bystander tells us about seeing a mother-snake swallow a lot of little ones, after which she crawled into a log. The boys plugged the hole up so she could not get out; and after school they split the log open, and killed the mother, and found the “juveniles” still alive. So this answers a part of my question.—We are glad to know that the bees at the college came through all right.]

### ALFALFA AND SWEET CLOVER IN KANSAS.

#### SOMETHING SPECIALLY FAVORING SWEET CLOVER.

The writer of the following letter sent us an order for 100 lbs. of Bokhara, or sweet-clover seed. As this aroused our curiosity we wrote him, and he replies as follows:

It may be of interest to you to know what it was wanted for. Two years ago two neighbors (living ten miles from me) each bought a sack of alfalfa seed and sowed on their farms, which joined. The one came up and furnished a great amount of feed the first year. The other got but little or no feed the first season. Both fields bore purple or similar blossoms. The plants were somewhat similar, only that one grew very large, and fed a great many hogs. The crop was cut three times, while the other seemed to be getting root. The second year one field bore white blossoms; the other, the same as before. Upon investigation one plant proved to be sweet clover, the other alfalfa. The gentleman who had the alfalfa said the sweet clover double discounted any plant he ever saw for forage; that stock did well on it; that it produced well on ordinary land, of a dry season, and he was very anxious to get some of the seed. As I wanted something for hog-feed, I told him if he found any to let me have some. But on examining your catalogue which you sent me, I found you quoted the seed, and I ordered immediately, and then notified the gentleman of my action, and told him he could have 50 lbs.

I may not be satisfied with my venture. I have since been told by men from York State that it is a bad weed, impossible to get rid of, and that nothing will eat it; but I shall sow all the same. I have been in this country 32 years, and have had much experience with cultivated grasses. I have tested some kinds that were pests in the east, and they would not live long in this climate. Our soil is good enough for any thing, but it wants a peculiar grass to stand the climate. Any plant does well in a moist season, but we have dry hot seasons that kill any grass I ever planted. The native grass of the country always lives through and keeps green, and gives good pasturage and some hay.

C. C. GARDINER.

Bradford, Kansas, Apr. 21.

### THE NEW WATER CURE.

RENDER UNTO CÆSAR THE THINGS THAT ARE CÆSAR'S, AND UNTO GOD THE THINGS THAT ARE GOD'S.

Among the great numbers of letters that have been received in regard to this matter, there are perhaps half a dozen who suggest that Dr. Wilford Hall has not received quite the credit that belongs to him. Our friend Freeborn, on page 377, suggests something of the kind. Three or four think it is not quite clear that I was justified in “breaking my pledge,” etc. As this matter of charging several dollars for information that can be put into a very small pamphlet, or perhaps on a single sheet of paper, is a thing that comes up every little while, let us consider it a little. Some years ago Herman Flick advertised artificial honey, and made great claims in regard to its wonderful excellence, and the cheapness with which it could be manufactured. I sent him \$2.00 for the secret; but as soon as I received it I found he had copied it from *Dr. Chase's Recipe Book*. I do not remember whether I signed a promise not to tell or not. In fact, it *does not matter* particularly. I found him to be a humbug and a swindler, and it was clearly my duty to publish him as such, because he was *obtaining money under false pretenses*. The “pretenses” were not only *very many*, but they were *very false*; had it actually been a *new discovery*, the case would have been very different indeed. Some tell us that Dr. Hall is a *good* man, but that it was only an error in judgment. Where a man, by “errors in judgment,” takes a great many thousand dollars out of his *neighbor's* pockets, and puts this money into *his own*, it begins to look a little as if there were something more than mere error in judgment. Well, let us drop the past and call it square. Let us say he deserves what he got, in view of the good he has done. How about the present? Dr. Wilford Hall's agents are canvassing with greedy haste almost every town in the United States; but as soon as one of our little tracts gets into the town the business is done up, and the agents gather up their circulars and depart to some place where A. I. Root is unknown. They have even gone to California, and the friends of justice are following them there with the little pamphlets. Now, can Dr. Hall and his agents be Christian men, or even honest men, when they continue to receive \$4.00 from each individual for something they know is being scattered abroad all over the land free of charge? Who will answer? What excuse does Dr. Hall make for such a practice? Why, the only excuse he possibly can make is to *deny* that his discovery was in print previous to 1850. See the following from his journal, the *Microcosm*, for April:

Now, to nail this villainy, and put a padlock on the pens of the scamps referred to, we will pay E. D. Scott one hundred dollars in cash if he will show us any publication, however obscure its author, which sets forth the essential details of our Health Pamphlet, bearing a date earlier than that of our discovery, said date being proved to be authentic, and not cooked up by some miscreant to serve a rascally purpose.

I have right here in my hands, while I write, Fowler & Wells' Water-cure Manual, by Joel Shew, published in 1847.† I do not want the

\*Dear friends, I have broken *no* pledge. I have not copied from Dr. Hall's pamphlet; I have only copied what I found in Kellogg's doctor book and the Water-cure Manual.

†Among the readers of GLEANINGS we have one whose *grandfather* was Joel Shew's brother, and this friend promises us some valuable facts in regard to his great-uncle's experiments.



hundred dollars, but I do want Dr. Wilford Hall to stop his highway robbery; and I hereby give him warning, that, unless he does it at once, I will lay the whole matter before the Postmaster-General, or other proper authorities. How much Christian spirit do we find in the little extract I have given above? Well, there is considerably more than a page of abusive slang, very much like it. The Water-cure Manual contains one whole chapter on this matter of internal water cure, and much of it is so exceedingly valuable that we shall probably give it in our next issue. The press of our country is now quite generally active in exposing Hall. Several papers have copied our little tract entire; and we call upon the journals of our land to help put down this extortion and fraud.

Of course, Dr. Hall is not the only one engaged in this same swindle. Great quantities of circulars have been sent out by one Lemke, Menominee, Mich. I wrote him at once, asking him if it were the same thing as Dr. Hall's secret. After waiting some time for a reply, and receiving none, I sent him \$2.00 (his price), but I did not sign his promise or agreement: therefore I can give you the whole of it, without leaving grounds for any one to say that I have broken any pledge. We make extracts of all we consider of any moment, as follows:

**LEMKE'S MEDICINELESS PRESCRIPTION FOR THE CURE AND PREVENTION OF DISEASE.**

The large intestine is about five feet in length, and it may be filled in an adult so as to present a circumference of twelve inches.

The colon is that part of the large intestine which extends from the cæcum to the rectum, and which is divided into three parts, distinguished as the ascending, the transverse, and the descending. Here is where the excrementitious matter discharged into it by the small intestine acquires the fecal smell, which increases the longer it is retained in the colon.

It may as well be admitted first as last as being true, that almost all ailments which afflict humanity come from impurities or disease germs, microbes, or parasites, which are carried in during respiration and secure a lodgment and enter into the vital circulation, only if they find a diseased spot favorable to their propagation, or from the impurities that enter into the vital circulation from what we eat and drink. These impurities may come directly from unwholesome food we eat, or indirectly from the absorption into the circulation of disease-bearing germs, which arise from the stench of the fetid matter which a person carries in the colon. The quantity so carried about, whether there be a regular daily movement of the bowels or not, is estimated at from one quart to two gallons. Who would, for a moment, carry about or sleep with such an enormous mass of putridity and disease-bearing stench if a way could be suggested by which it could be got rid of without making the organs do it by drugs or laxatives?

Who would not gladly embrace the opportunity of adopting an agreeable, harmless, benefitting treatment by which this awful disease-producing, dangerous, foul, disagreeableness is directly removed, while, at the same time, all soreness, stiffness, fevers, and inflammations are driven out of the system? This I propose to do, and am successfully doing right along, by injecting into the rectum hot clear water, enough to fill and distend the colon, or flush it, the same as you would flush a sewer that is clogged up.

**PRESCRIPTION.**

Buy a rubber fountain syringe at a drugstore (or for \$1.50 we can send you one) that will hold two quarts or more. Screw a hook into the ceiling above the foot of your bed; pour into the bag of this syringe two to four quarts of clear water, so hot that you can just bear to hold your hand in it without being scalded (never use cold or tepid water). Insert the rubber stem of the syringe into the rectum; hold the water there for 15 minutes, if possible, and roll about on your bed, when you will be ready to discharge this enema, together with the entire contents of the colon.

Those suffering with Bright's disease or other kidney troubles, or inflammatory rheumatism, piles,

inflammation of the bowels, or other organs, should inject a second dose of half the quantity of first dose of hot water into the rectum, and hold it there against all efforts to break away, and go to sleep with it. After a few hours you will be ready to expel it through the kidneys and bladder.

**DOSES.**

Children, 1 to 5 years of age, 1 pint; from 4 to 15 years of age, 1 to 2 quarts; over 15 years of age, 2 to 4 quarts.

Persons ailing should take this treatment once a day before retiring to sleep; those in good health should use it every second or third evening.

**SNAKES IN CHINA.**

**THE LARVÆ OF BEES AND WASPS A DELICACY.**

*Friend Root:*—When one is off on a tour, and sits down to eat all alone, GLEANINGS is a good thing to read between bites, and make one feel as if he had good company. But to-day I happened to open a number in which Prof. Cook gets enthusiastic over snakes, which are not so appetizing as bees and honey. I, too, can tell a snake story.

Last summer I was strolling in a wild glen, seldom visited by man, along a path made by wild pigs, when a loud hissing startled me, and there on my right, about four feet away, was a large snake slowly coiling itself. Being empty-handed I sprang forward; and, a tough little vine catching my foot, I half tumbled, half pitched, about five feet down a steep bank into a tangle of viny bushes, from which I crawled out with a sprained knee that has made me a cripple for six months. The only good way out of the glen was past where the snake lay. He was coiled up where I first saw him, not in a pile, but round and round, flat on the ground, his triangular head resting on the central coil. He was very nearly the color of the ground, and in the shadow of the overhanging thicket, with his body flattened down close to the ground, I could but just clearly make out his outlines from ten feet away, though he was as big around as my wrist, and fully four feet long. I saw that he was too far away from the path to reach it at one spring, and began to move forward slowly, when, without an instant's warning, his head was 18 inches up in the air, and coming at me with jaws gaping almost six inches wide. He struck out only about two feet; but the suddenness of it made me spring back, and, tripping again, I tumbled over on my back. Then I got up; and, going down the glen a little way, I climbed up to the path and limped home. I think that snake would make a valuable addition to Prof. Cook's collection, and I am sure I wish he had him.

It seems strange, that, in so densely populated a country as this, wild beasts should still be common; but so it is. Where I am to-day it is market day, and I have seen three antelopes and one armadillo carried past, and have myself just dined on a golden pheasant. In this region, when the rice is in the milk, the farmers have to guard it night and day from the ravages of the wild pigs. A few Sabbaths ago I was holding meetings in a village near Shaown and was told that, early in the morning, a tiger had eaten a sow. She had been turned out at daybreak, and, not coming back to her little pigs, the men went to look for her, but found only the remnants of a tiger's feast. Later in the day I saw the tiger's tracks, and measured them with a tape-measure. They were a strong five and a half inches broad. Such a beast would eat up a pig just as a cat would a rat.

Once as I was approaching a village I saw a number of men coming from off the hills, armed

with hoes and sticks, and was told they had just been chasing off a tiger. I have never yet heard of a man-eating tiger in this part of this province. The nature of the country here, narrow valleys between high hills, and the absence of freezing cold winters, favor the increase of such "varmints," while superstition hinders somewhat their extermination. Poor weapons and ignorance of natural history aggravate the trouble. Once on a mountain path I saw a snake and asked a Chinese brother, "Have you poisonous snakes here?" After a short silence he cautiously replied, "On the hills we dare not speak carelessly." He is a good man, nevertheless. When he began to read his Bible at home his mother gave him forty blows on each ear as hard as she could lay on, first one hand then the other, and he, a man grown, took it all as meekly as a lamb. But now he is high in her favor.

I have written how Chinese bees will come and locate in curious places; but, alas! they will go just as they come. This summer I visited the places where I saw the bees under the bed and under the counter; but they were gone. In both cases the owners said the bees went off of their own accord; and Mrs. Whitney's "self-come" bees went off in a body one day last summer, leaving a lot of empty combs badly infested with moths. So far as I know, the Chinese use honey only as a medicine; but the larvæ of bees, or of wasps either, are considered a very dainty morsel.

I have just astonished a Chinaman by telling him that, even in silvery America, the lazy and careless come to want. J. E. WALKER.  
Shaowu, China, Feb. 21.

### HIVE RECORDS.

#### WOODEN POINTERS INSTEAD OF BRICKS ON HIVE-COVERS: A GOOD SUGGESTION.

During the past year there have been several articles from extensive bee-keepers, describing their methods of keeping a record of the condition of each hive by means of stones or bricks placed in various positions and on different parts of the cover. Now, I think I have a better way. Nail or screw three small buttons, each  $1\frac{1}{2}$  or 2 inches long, on the cover of each hive—one in the center and the others in the corners of one end. Let one represent the queen, one bees and brood, and the other honey. Each button may be turned to point in each of eight different directions: that is, toward each corner, and half way between these. Each direction has its meaning, and a single glance tells the exact condition of the colony the last time it was examined. I think the buttons superior to bricks or stones, because they are easier to operate and are less liable to be knocked out of place; but principally because, in removing the cover to examine the colony, no special care is needed, while with bricks or stones they must first be removed, or the cover handled very carefully to prevent changing their positions. Where a person is handling 200 or more colonies, something of this kind is needed to economize time, and this method seems to me to have more points of excellence than any other I know of.

#### M'INTYRE'S UN-CAPPING-BOX.

This, as described on page 769, 1890, strikes me as being just exactly the thing for the large honey-producer; but I think an improvement could be made by dividing the box horizontally, the meeting edges to be beveled, the upper into the lower. The box would still be solid and

firm; but removing the upper half would greatly facilitate taking out the drained cappings.

J. WEBSTER JOHNSON.

Tempe, Arizona, March 30.

[You have given us a good suggestion in regard to pointers fastened on the hive-covers. I had thought several times of adopting a similar plan. When working over a hive I usually sit on the end or side of the cover; and, of course, slates, stones, or other such memoranda as are held down by gravity, in obedience to the same law are displaced, and I have got to remember to put them back just as they were, or slightly modified to indicate the changed condition of the colony. Now, your pointers would not be disarranged at all, and could be made for an insignificant sum of money. For record-making on hives, we want something that we can read and see at a distance, just as we would tell the time of day on a clock-face by the figures, so far distant as to be almost undiscernible. Your suggestion in regard to the uncapping-box is a good one, I believe.]

E. R. R.

## LADIES' CONVERSAZIONE.

### BUILDING UP WEAK COLONIES.

MRS. HARRISON HAS NOT BEEN VERY SUCCESSFUL IN IT.

Mrs. Axtell, at our last conversazione, said, "I know of nothing that a woman can work at, and make pay better, than to take those weak colonies under her wing and nurse them into strong ones, by the time the honey harvest comes." I've done a good deal of this nursing business, and I never worked at so low wages at any other kind of work. I barely earned the water that went into my soup. Of late years I do all my spring feeding in the fall, and very little of it then, for the Illinois River bottoms have never failed to furnish a flow of honey in the fall, that I know of. When I put on Hill devices I tell the bees that they have plenty of honey to last until fruit-bloom, so good-by. After our bees were all taken from the cellar. Mr. Harrison said, "I wish you would look into that colony of bees nearest the grape-arbor, for they are weak, and I am afraid that they are starving." I was sorry that I knew that there was a weak colony of bees; but as I had promised the minister to "obey," I went and examined them and found plenty of honey, but only about a score of bees and a queen. I covered them up and left them until the afternoon, when it was quite warm, and opened the hive again, and was delighted to find out that the bees had departed for fresh fields and pastures new. I took out the combs, trimmed off all excrescences like old queen-cells, scrubbed the hive with brush and hot suds, rinsed with boiling water, and, when dry, put back the combs and carried it into the cellar to remain until I had a swarm to run into it.

I've tried every way that I ever heard of to build up weak colonies. I've given them capped brood, and I've brushed off young bees from combs belonging to strong colonies, and picked up the downy ones and given them to the weak, and I did more harm than good. I should have had more bees at swarming time if I had let them alone. It is not pleasant to talk of our failures, but open confession is good for



the soul. Will Mrs. Axtell tell us how to build up weak colonies? I've confined them to a small space in the hive, with a nice clean comb of sealed honey, and tucked them up warm; but failure would result.

I've been practicing water cure for many years, in curing the ailments of my family, but novices should look a little out or they will do more harm than good. A specialist of the eye and ear told me lately that washing out the nostrils with a douche will inflame the ears, and my experience corroborates it.

Peoria, Ill., April 21. Mrs. L. HARRISON.

[Mrs. H., while many of us have had an experience much like your own, we have also, at different times, had experience like Mrs. Axtell's; at least, I think most of us have. We thank you for your concluding caution.]

#### A NEW MEMBER TO THE LADIES' CONVERSAZIONE.

##### SUCCESSFUL WINTERING IN RICKETY HIVES, ETC.

I am very happy to notice in GLEANINGS a ladies' department, where we all can air our views on the different parts of bee-keeping, besides rendering assistance to each other in many ways. I shall beg to sit on the lower round of the ladder, and listen to the higher lights above me, that have had the practice and experience; for that is what we all require to be successful in any undertaking; it may seem very pleasant to hear one tell how to do this and that, but it is quite another thing when we do it ourselves.

I have only a few colonies, commencing with one in the spring of 1889; last year increased to seven, this spring dwindled down to three; have lost many bees, but gained much in knowledge and experience. I fed them in the fall, but very late; did not take the frames out to be sure they had enough, for I was afraid to handle them. There is an old saying, that "misery likes company," and I presume to say, that there are many as badly off as myself.

##### GLOVES.

I have a pair of rubber gloves that I have used some, but dislike them very much, as they cause the hands to perspire, and are very clumsy. A few days ago I changed two of my colonies into new hives and used some common gloves partly worn out, that were made of pig-skin. They are thicker than the common kid—something like dogskin, with large loose wrists. I got a few stings where the fingers were worn thin; but they did not trouble me as on the bare hand. I use a hat with common window-screen wire around the rim, four or five inches deep; below that is mosquito-netting, gathered at the bottom with an elastic cord.

##### HIVES.

I read about hives with double walls and dead-air spaces, and have come to the conclusion they all amount to nothing, unless two important points are observed; first, a large strong colony; second, plenty of good food, that will last until they gather pollen. My reasons for thinking so are these: I have a friend (a lady) who raises bees, and, having a surplus, wished to dispose of some of them. I thought there might be a chance to replenish some of my empty hives; but when I saw them I almost stood aghast: some of them hung with one hinge that would hardly keep the door fastened; and one was a low square box, I might call it punk (that means rotten wood). It looked as if

one should point his finger toward it, it would collapse. I did not purchase, for it was eight or nine miles from my home, and I knew I never should have courage to move them in such dilapidated hives. Now, will you please inform your readers what kept sixteen out of seventeen colonies alive through this hard winter? I think it must have been strong colonies, and plenty to eat; they certainly did not lack good ventilation.

Mrs. W. H. BENT.  
Cochituate, Mass., Apr. 20.

[Mrs. B., your point, that good strong colonies, with plenty of stores, often winter nicely in the most rickety and exposed situations, is by no means new; and a good many times rickety hives winter all right when the others do not. This points strongly toward the necessity of an abundant ventilation of some sort, either bottom or top, especially when bees are exposed to the severity of the weather outdoors.]

#### HOW TO KEEP ON GOOD TERMS WITH OUR NEIGHBORS.

##### SOME EXCELLENT SUGGESTIONS FROM MRS. AXTELL.

We should follow the rule that Christ has laid down—to "love our neighbors as ourselves;" and if our bees trespass upon our neighbors, let us make good the harm and annoyance they make, not only by sending them cakes of honey, but by exhibiting neighborly kindness in many ways.

Soon we shall be setting our bees out of the cellar. Those of us who have near neighbors should send them word that we are about to set them out, so that they may not wash on such days, as it is very annoying to the good housewife to have her clothes all specked up, and her newly washed windows dotted. It is better to meet our neighbors more than half way in the matter of keeping peace, rather than getting their ill will, as it costs much more in dollars and cents in the long run, and kills all our influence for good over them and their children, and destroys our happiness and peace. It is no more than right to pay our just debts, that we send them liberal amounts of honey occasionally—yes, quite often, as our good neighbors seldom let us know when and how much our bees have annoyed them. How bothered they are with the bees around their horse and pig troughs! and even the little drinking-vessels of the children are at times swarming with bees. I don't know that they ever at such times sting the chickens, but they frighten their owners. The bees seem to prefer to frequent different places for water, even when they have an abundance at home in troughs of easy access.

There are many ways that the bees annoy our neighbors that we never know of—hanging around the milk-troughs; stinging the little folks as they tramp upon them in the damp places in the back yards; following the men while at work in the fields, sometimes, though more than likely it was some other neighbor's black or hybrid bees instead of our gentle Italians. Yet, because we have so many bees we get the credit of the annoyance. A few pounds of honey will sweeten the otherwise bitter feelings, and cause only good will and kindly feelings. Generally the neighbor will repay much of the gift in sending back in return something we appreciate as much as the honey, or doing kindly deeds.

We need not send our first-class section honey. Broken pieces or bulged honey, if nicely laid on

a plate or in a bright tin pan, will be appreciated just as much. Often so kindly a feeling will arise that the neighbor will ask for broken or bulged pieces when buying, to help us make sales of it, realizing that it is just as good honey as whole sections.

In planting an apiary we should place the hives as far from the public highway as possible, and have them convenient to care for; also protecting them from the gaze of the public by planting a thick and quickly growing row of trees, or making a high board fence. I prefer the trees, as they are so much more handsome, and more permanent. We thus throw the bees so high over the road that passersby can not meet them in passing, and hide them away, as it were, from the public gaze. Many people are as afraid of bees as of death, almost; and if they were not where they could constantly be seen, they would pass by and not think of them.

We used to be so proud of our bees that we thought it nice to have them near the road, and to have people look at us while working with them. One Fourth of July a large swarm came off just when an open carriage of people was passing. The man put his whip to the horses, and drove right through the swarm, as it flew low. The people were very much frightened, but no harm was done. Another man, who often passed by, we noticed would always pull his hat low down over his face, and ride quickly by.

One day one of the commissioners of the highway politely notified us to move our bees into a back yard, and further from the road. We promised to put up a high board fence, or plant a thick row of trees, if that would answer. The trees were immediately planted about two or three feet apart. They quickly made a hedge, as it were, which threw them entirely above the road, most of the bees preferring to leave the apiary in another direction, rather than fly over the hedge of trees. Since then we have had no one find fault in that direction. In following the above suggestions we shall not be apt to need the aid of the Bee-keepers' Union very often, though it is a grand organization, and every one who has bees would do well to join it, as there are many unreasonable people in this world, and we can never know when we are safe or when other people have their rights. We need the Union to decide what is right.

At one time we were about to lose money by an unjust commission merchant. This was before we joined the Union. We made mention that there was such an organization, and he had better do what was right. The result was, he paid us \$30.00, which we probably should have lost. I felt that it was a little deception on our part, but the organization did a good work for us, and is doing a good work, and is a blessing to those who are not members as well as those who are, as they promise to help only those who are members at the time of the trouble. It costs so little to be a member. I wonder that every one who owns bees does not join.

Roseville, Ill., Mar. 14. MRS. L. C. AXTELL.

### AN UNPLEASANT EXPERIENCE WITH RUBBER GLOVES.

#### A GOOD SUBSTITUTE.

Twelve years ago I became much interested in bees. I subscribed for GLEANINGS and the A B C, and other publications; I also ordered a Quinby smoker, and a pair of rubber gloves from A. I. Root. I prepared a hat and dress for the work. I had previously purchased three

colonies of bees, thinking I was making a good beginning. I bought them for pure Italians. I could not then tell as to their purity, but they proved themselves good workers and good —stingers. It was amusement for me to look over my bees and look up the queen, especially if I had visitors. They must see my yellow queens. Soon my gloves were rotted by perspiration. The rents would come, and with them the stings. I would try to patch them, but they were so rotted and soft that the threads would not hold. I would try again and again, not knowing what could be better than rubber gloves. My hands would be so swollen I could hardly draw off my gloves, wet with perspiration, and covered with numerous new rents and stings. Discouraged and almost sick of my bees (for stings affected me very badly for the first year or two I worked with them), I went to Sherburne and bought a pair of boys' sheepskin gloves for 25 cents. I soon had them on trial. The bees literally covered them with stings, leaving their stings with the gloves. I thought I should soon lose all my bees in this way. Necessity is the mother of invention. I took honey and beeswax melted together. Then I rubbed my gloves well with this preparation. I had no more trouble, and have used such gloves ever since. I have worked the whole season without a sting on my hands. The Quinby smoker and A B C proved very useful to me. I have read GLEANINGS ever since, and would not be without it as long as I am interested with bees. I am pleased with the opportunity of visiting with my bee-keeping sisters through GLEANINGS. MRS. OLIVER COLE, Sherburne, N. Y., Apr. 14.

#### COVERING FOR THE HANDS.

The discussion in GLEANINGS on this subject is very interesting to me, as my greatest objection to bee-keeping is, that I can't keep my fingers clean. I like best to have my fingers free, as I can work so much surer, and am not so apt to let the frames slip; but as we run mostly for extracted honey, it is hard work to keep the fingers presentable during bee-time. I have tried cotton and buckskin gloves, but we like woolen mits better than any thing else we have tried. They are made of rather coarse white woolen yarn, with long wrists, coming well down on the fingers, and ribbed all the way. They make a very good protection for the hands. The bees don't sting through them very much, and they are not uncomfortably warm. We lap and pin the bottom of the sleeves, then draw on the mits. They are tidy, and no bee can get in. But who can tell us the easiest way of getting the fingers clean? Or could we learn to work quickly and surely with the fingers bunched up? Once I had a pair of black mits, but they made the bees so angry we could not wear them. MRS. M. A. SHEPARD.

Barry, Ill., Apr. 19.

#### ASBESTOS PAINT NOT SATISFACTORY.

I noticed in GLEANINGS, Mar. 15, A. W. Lindsey wants to know about asbestos paint. I have used it on hives, but I do not like it. It does not last. The last hives I painted I got lead and oil, etc., and mixed my own paint, and it is much better.

#### APRONS.

As aprons seem to be the topic, I will say that I get brown checked shirting. It is thick enough to protect my dress, but not so heavy and warm as bed-ticking. I have never worn gloves. I never thought I could work with them, but I wish I could, and prevent tan on my hands.

Benson, Vt., Apr. 7. MRS. L. S. AUSTIN.



## THE BEES OF THE OLD WORLD.

P. H. BALDENSBERGER TELLS ABOUT THEM.

If we draw a diagonal line, beginning at Genoa, in Italy, and ending at Tripoli, in Africa, across the Mediterranean, we find the bees east of this line inclining to the yellow race—Italy, Greece, Turkey, and Egypt having the banded bees, while Tripoli, Tunis, Algeria, Morocco, Spain, and France have the black bee. Just as the banded Italian differs from its fellow-insect in Egypt, so does the black of France from that of Tunis and Tripoli. On the north of the Mediterranean the Alps are the limits, while on the southern shore the Libyan Desert forms a barrier. Again, if we compare all countries where Mohammedanism has had its sway for any length of time, we find those countries lying like a big crescent, one tip beginning at the Pyrenees, the concave line running down below Italy, and mounting again to the Bosphorus, including Greece. These have hives lying horizontally, and, as a general rule, worked more humanely than those in the region of the "cross." Italy forms the vertical axis: the hives stand upright, and the bees are sulphured every autumn, to take away all wax and honey. In southern Europe the bar-frame hives are finding their way with great difficulty.

In the south of France, the bee-keepers (or, rather, keepers of bees, for there are none that are real apiculturists) possess between five and one hundred hives, which they keep in long square boxes about three feet high and one foot broad. The top is nailed with a board, while the bottom is open, and put simply on a flat rock or stone, the unevenness of which forms different flying-holes. Some are also kept in hollow tree-trunks with big flat stones on the top, on an inclined plane for the rain to run down, and, at the same time, by its weight to keep the hive from falling in case of wind. Generally they place them against a wall to shelter them from the north and west winds. They expose them to the south or east.

It is a very curious sight to see a number of those hives standing upright and irregular, just as a flat rock may be right or left, up or down, in crooked trunks, with huge stones on top. I confess the apiaries away in Palestine or on the borders of the Nile, or in the wide recesses of the Atlas Mountains in Algeria, do not present such a novel and altogether savage aspect as does such an apiary in a civilized country, where every thing is flourishing except apiculture. How often, since I have been wandering about the Provencal Alps, and finding such neglected apiaries, have I put the question to others as well as to myself, "Why is apiculture so low in such a beautiful country abounding in fruit-trees, red and white clover, thyme, rosemary, heather, and a deal of other plants too varied to enumerate? They are free from taxes. The only answer I invariably got was, "The cruel winter kills so many bees, thus discouraging the farmers." I came across an old bee-book, written by an "Abbe Della-rocca," in Syra, in the Grecian Archipelago, and printed in Paris in 1790. The book is very ably written—or, rather, the three volumes—and it seems that, more than a century ago, the bees were treated here just the same as they are now; and the desolate priest says the cause of neglected apiculture in France is because the noblemen had a certain right on bee-hives; and, second, when the farmer could not pay the heavy taxes asked for the treasury, the tax-gatherers would take away his hives to fill up the sum. Disgusted with such robbing they finally gave up bee-keeping. Since then the

French Revolution has put a stop to all these abuses; but still, apiculture has not come to its bloom. It was inevitable that the discouragement should then become so general that a century has not sufficed wholly to wipe away the bitter feelings that have so fast taken root in the French country people.

The way they now work the hives is as primitive as can be imagined. The swarms are lodged in a box or trunk of a tree, as above described, and left alone. In autumn all hives are visited, and 75 per cent are left untouched "for seed," as they call it. The other 25 are sulphured, and the combs, with the honey, sold to dealers who come yearly to buy all they can. The 75 are the stock left to swarm the following spring. Such hives are full of honey and pollen, and are capable of giving good swarms. This part is very humane, but not very remunerative to the owner. If the 75 have wintered safely, a good stock and strong apiary follow next year. They never (but in a very few cases) take out a part of the honey. In consequence of such treatment they want no smokers, no veils, and, generally speaking, no bee-keeping utensils. The honey and wax merchants are expert in this kind of apiculture, and take the hives destined to be sulphured to death, and weigh them. They then deduct the possible weight of the empty hive, and pay for the wax and honey per pound. They scrape out comb, honey, and dead bees, and put the whole into wooden tubs, taking as much as 150 lbs. of comb. The hives are then covered, and they thus go around from one apiary to another. When the wagon is well loaded they drive home. The comb is now broken up into the smallest possible pieces, and put into a stone trough having a wooden sieve at the bottom, thus permitting only the honey to pass; and by an outlet into a receptacle, such a trough may easily take over a thousand pounds. This first honey is sold on the market as virgin honey, mostly stored away in wooden barrels holding between 140 and 190 lbs. of honey. The residue of the trough is now put into flat baskets, having a small opening at the top to introduce the comb; and half a dozen such flat round baskets are now put under a large press, with a big wooden screw acting on the pile of baskets. On top of the baskets a board is laid to produce equal pressure. The honey from this pressing is impure, and is sold as second-rate honey in the same receptacles as the virgin honey. A good deal of honey is sold to the factories of Montelimar, Ardes, Aix, Nîmes, Narbonne, etc., where honey-cakes are made. No Frenchman will pass his Christmas without having a taste of these honey-cakes, called "nongeats." Hundreds of thousands of pounds are consumed yearly. They are made of honey, sugar, and almonds. The trouble is, they keep only during the cold season. As soon as the hot weather comes on they begin to flow. Thus they are sure to be fresh every year. The comb pressed out is now put into a big caldron, and boiled. When it is well fluid this is put into the same baskets again, which are now furnished with long straw, and, as quickly as possible, put under the press again, and received in wooden receptacles. While the pressing is going on, boiling water is poured over the pile of baskets to keep the wax flowing. In some cases the farmers do the whole work themselves, pressing out the honey with their hands, and putting the boiled wax into a sack, and twisting at both ends to get the wax out. This wax is generally of a nicer color, as being better strained, while the honey is not as pure, having a mixture of pollen, wax, etc.

The bee in the south of France is black, showing some white bands at the first and sec-

ond rings. The fuzz is strongly inclined to yellow; a slight tinge of orange marks both sides of the first ring. Very few men (as a rule no bee-keepers) have any movable-bar-frame hives, either Langstroth, Abbott, or Bastain. None of them have an extractor. They can have only a very little more honey than the "fixists." About Toulon, Cannes, and Nice, they move their bees on muleback to the higher Alpine regions in summer, putting the hives individually in sacks, tied at top. In autumn they bring them back again, and then take the honey in the manner above described. In Nice a single woman had a bee-hive in a cork-oak trunk, only the bark being used as a hive. She was selling comb honey right out of the hive. The bees, naturally enough, had been sulphured previously. The hive was well filled with sealed comb, and might have contained 40 lbs. of honey. No robbing was going on, as the hives are kept at some distance from town; and even Nice had such weather in January as to keep bees at home. They seldom have ice here, though. Flowers are sold all the year round. Foreigners from England, and even America, flock here in winter.

PH. J. BALDENSPERGER.

Marseilles, France, January 11, 1891.

[And so, friend B., honey-cakes are not a modern invention, after all. We are very much obliged to you for the birdseye view you give us of bee-keeping in the Old World; and we hope our friends mentioned by you will soon get into the modern ways, and throw aside their brimstone and rude hives.]

#### AN INTERESTING LETTER FROM CUBA.

500 COLONIES OF BEES IN ONE APIARY, WITH  
A PRODUCT OF 70,000 POUNDS OF HONEY  
IN A POOR SEASON.

*Friend Root:*—Another year has gone, and left behind it one more short crop. As this was the first season since I came to Cuba, when I have had what I called bees enough in one apiary to test the honey resources of any one locality, I naturally feel disappointed that the weather was such that it was impossible to arrive at anything like an accurate estimate of what 500 colonies of bees in one apiary would do. Well, now, for the results. We began extracting Nov. 3 (that is, to go over the bees and take out what old honey they had left over from the summer, which amounted to only 500 pounds). The season was opening up fairly well, and the bees did well through November, we taking 10,400 lbs., an amount never before taken in the month of November. The first ten days of December we took 1200 lbs., and with us we think by the 10th of December the season is hardly begun; but on that very day a cold wave struck us, and for 47 days the wind blew from the north, cold, cold, every day. The cold weather in England, France, and Spain, did not spend all its force there; but in crossing the Atlantic it seemed to have got the "grip," and for eight weeks it held us Cubans with a grasp we could not shake off. The records show this last winter to have been the coldest since 1855. Now, from Dec. 10 to Jan. 27, 47 days, is the heart of our surplus season. To prove there was something wrong, look at the record of the last two years. The fall and spring of 1890 and '91 (then we had about 300 colonies of bees) in November we took 3600 lbs.; this year, with over 500 colonies, we took 10,425 lbs. Last year the first ten days of December we took 3275 lbs.; this year, 1200 lbs. Last year for the month of December we took 19,000 lbs.; this year for the same month, 24,400.

Last year in Jan. we took 25,500 lbs.; this year, same month, 19,025. Last year in Feb. we took 5500 lbs.; this year, 10,400 lbs. Last year in March we took nothing; this year 6150, making for the crop 70,250 lbs. By looking at the amount of honey taken in the two last seasons, and comparing dates, you will see that, up to the 10th of December (when the cold weather began), we had taken 22,400 lbs., against 6875 lbs. for the same date the year before. Then you will see, in January we took only 19,025 lbs. against 25,500 lbs. the year before, and we consider January much the best surplus month of the year; but it was too cold this year.

I think I told you last year, that, when the business here is so managed that two good active men can take care of 500 or more colonies in one apiary, and take 75,000 or 100,000 lbs. of honey, then the business would pay. Now, with such a winter as this last one has been, we have produced 70,000 lbs., and at this date our bees are in fine condition, with hives full of bees and honey, and swarming daily. Does this crop and the conditions under which it was taken, prove to the advocates of 50-colony apiaries that 550 can be made to pay all under one roof, and controlled by one management and set of hands and fixtures? Results have placed it beyond the reach of doubt. It is no longer a question, "Will it pay?" but, "How can we best take care of the crop as fast as it is stored, with the least possible outlay of money and manual labor?"

Give me a common Cuban winter next winter, and if I do not produce 50 tons of honey from one apiary, then it will be very much different from what I expect; for I know this last one has been but a very little more than half a crop. This result has been obtained against the advice of all the novices and the world-be experts, both in Cuba and the U. S.—men who knew as much about the honey resources of Cuba as I know what the strides in the science of electricity will be in the next 50 years.

#### THE HOFFMAN FRAME NOT SUITED FOR CUBA.

You have called for an expression from "Southern bee-keepers" upon the Hoffman frame. I do not like the frame for Cuba nor for California. I can not do any better than add my testimony to that of W. W. Somerford, of San Miguel. I could not bother with such an arrangement here. We could not get out 50 frames a day here, where the bees give every thing fast, unless there is plenty of room for them to pass freely all around. Then they will not stick them. When I first came to Cuba in 1883 I was prevailed upon to bring some of the Hoffman frames; but after a trial I took the hatchet and made open top and side frames of them, and have not tried any since. We have our frames hung on tin rabbits that are thin on the edge, so there is no chance to stick them. You know we have to go over our bees every week. Well, to go over 550 colonies in six days, and extract the honey by hand, there is no time to lose in fussing and prying to get your frames out of the hives. I would not for the world say any thing against the closed top and end frame in localities where there is hardly any propolis; for those that use and like it would get mad about it.

#### TWO VS. SIX FRAME EXTRACTORS.

There are many things used in small apiaries that would hardly do for us here. We have to adopt the fixtures that arrive at results with the least possible waste of time. For example, this year we ran two six-frame extractors and a comb-cart holding from 80 to 85 combs; and, had the winter been like those I have seen since coming here, we should have been behind in getting the honey out of the way of the bees; but



as it was, we kept up with them very nicely. We could hardly think of depending on a two-frame extractor to throw our honey out; and for a man to think of carrying the honey in a hand comb-basket would be as discouraging as the other.

#### THE FUTURE OF CUBAN HONEY.

Friend Root, as we go on from one year to another in any business, we arrive at conclusions as to whether the enterprise is paying or not, and the probable outlook for success in the future. I started with this business here when it was indeed an experiment—when the movable frame was a wonder in the eyes of the Cubans; when all you could get for a gallon of honey was 35 cents; but now it brings 50 cents net (for we get pay for all the packages); and if the duty is ever removed, so that when you fellows get short we can send you a little to help you out, why, then we shall get more. So after the experience of the years I have been here, I can not but feel the greatest confidence in the future of Cuba's honey crop. It will go on and ultimately reach that grand climax that is enjoyed by him or that country that stands upon the top round of the ladder. The business is passing into the hands of the actual producers—men of more or less experience in honey-raising, and as such is always a step in the right direction, and it can not but result in a permanent good to the business and all concerned.

A. W. OSBURN.

Punta Brava de Guatao, Cuba, April 8.

[You ought not to complain very much about your past season as a poor honey year. It may not have been up to the previous year, but 70-100 lbs. of honey—my! you ought to be satisfied. Honey seasons in most localities are a variable quantity, you know.]

I am glad of your testimony in regard to Hoffman frames for Cuba; but, say, don't your tin rabbets get filled with propolis if you have so much of it? Our hybrids have done it for us more than once, and we can get along with Hoffman frames. Don't get the idea into your head that Hoffman frames are used by *small* bee-keepers. Hoffman himself has some five or six hundred colonies on them, and there are other bee-keepers who have two or three hundred colonies on them. In regard to propolis, I saw as much in the region where nearly 10,000 colonies are used successfully on closed and partly closed end frames, with success, as I have seen in any part of the U. S. I believe there are very few places in the U. S. where, because of the excess of propolis, Hoffman frames can not be used. Some parts of California and the southern part of the country may be among the excepted localities.]

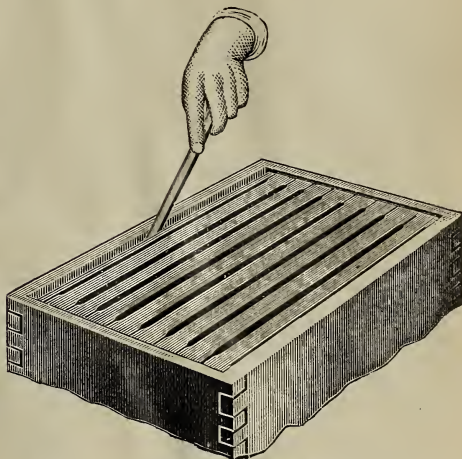
E. R. R.

#### THE HOFFMAN FRAME.

HOW THE INVENTOR USES IT, AND HOW ITS MANIPULATION COMPARES IN SPEED WITH THE LOOSE FRAME.

*Friend Ernest R. Root:*—My hive holds eleven frames without spacing-board; but to handle frames fast there ought to be at least one spacing-board and one frame less in the hive, which will give room to handle and get the frames apart without removing any from the hive. For separating and closing up partly closed-end, or the so-called Hoffman frames, I use a stout screwdriver or chisel, which, in closing them up, is inserted between the spacing-board and hive-wall, and with a single motion the frames are pressed together firmly (see cut). In this way the whole set of frames, or any number of them, can at any time be shoved

from one side of the hive to the other, which I found quite a saving of time. The crowding together of the frames before closing the hive is very important, as any space left between the close-fitting parts of the frames will, of course, be filled up with propolis by the bees, and would



MANNER OF CROWDING HOFFMAN FRAMES TOGETHER.

prevent close fitting when the frames are interchanged. If, however, any propolis should accumulate between the close-fitting edges, this pressing together in warm weather will easily remove it. If the hive is used for comb honey it will, of course, be better to use two or more spacing-boards, according to the number of frames the bees are allowed. Two spacing-boards will also be needed in preparing the bees for winter, so that a vacant space is left at each end or side of the hive, between the spacing-board and the hive-wall. Into these open spaces the quilt or rag, covering the frames, is tucked down. If as it should be, only seven or eight frames being left in the hive for wintering, good heavy covering can be used.



SPACING-BOARD WITH RUBBER EDGES.

The spacing-boards, see cut, are suspended like the frames, and are made smaller than the clear of the hive, to leave a bee-space at the sides and bottom of the hive, so as to work free, and also not shut out any bees by closing the hive. A strip of stout rubber cloth, about as long as the frames are close fitting, or nearly half way down, is grooved in the edge of the spacing-board, which strip is wide enough to crowd well to the sides or ends of the hive. This arrangement will hold the spacing-board and frames in place sufficiently, and also prevent the escape of warmth from the upper part of the brood-nest. Such boards will never be glued fast by the bees, enough to hinder the easy removal of the same.

#### WHY THE HOFFMAN FRAME IS SUPERIOR TO THE LOOSE FRAME.

The great advantages of close-fitting over the swinging frames in moving and carrying hives have been stated in GLEANINGS by others and myself, and I think they must be conceded by all practical bee-keepers. *In regard to rapid handling of frames in working bees, I will venture to say that I can, with my frame, work nearly double the number of colonies that I could with any frame that is not spaced or close fitting.* As you, friend Ernest, wish that some of us "closed and partly closed-end friends" would not be quite so modest, I will here indulge in a little bragging, and say that my partly closed frame, as a hanging or suspended frame, has one great advantage over the standing close-fitting frame. It is a fact, as I have it from some extensive honey-raisers who use the standing frame, that very often they have to suspend work on account of robbing, when such hives are taken apart and frames handled. It is for the bees very much like pulling down their house, and robbers have too much of a chance at them. In a box hive with hanging frame, the robbers can, when the entrance is guarded, attack the open colony only from the top of the hive, and can easily be managed by smoke.

#### HOW TO CIRCUMVENT ROBBERS IN AN OUT-APIARY.

As robbing is one of the worst troubles of the many that belong to bee-keeping, I will explain how I manage this difficulty. As soon as I find the bees are inclined to rob I take a small bunch of grass, clover, weeds, or some leaves of shrubs or trees, and stuff the entrance of the hive quite loosely before I open the hive at all. In this way robbers can not get in after the hive is closed again and disappear. Soon after, the green stuffing shrinks and drops away from the entrance, and the bees have their door opened again without any attention from the bee-keeper. If it were not for this little invention I could not, when bees are robbing, as I have done now for several years, work and finish an apiary of 100 colonies or more, within one day, in a continuous job, without being troubled a good deal. JULIUS HOFFMAN.

Canajoharie, N. Y.

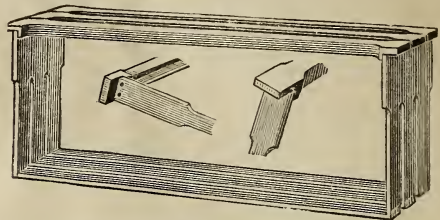
#### THE HOFFMAN FRAME.

ADAPTED TO THE L. SIZE OF HIVE; FURTHER PARTICULARS ON HOW TO MANIPULATE;  
BY ERNEST R. ROOT.

Some time ago Mr. Samuel Cushman, of Pawtucket, Rhode Island, made a statement to the effect that, if he were the editor of a bee-journal, he would set forth the real merits of the Hoffman frame, and describe minutely, with suitable and accurate engravings, its manner of manipulation. Although much had been said in regard to the Hoffman frame at that time, he was satisfied that its real points of excellence had not yet been fully described. Our friend Mr. Hoffman, in the article preceding, has covered the ground pretty thoroughly; but as his description applies to a deep hive, I have thought best to have some photographs taken, illustrating the method of handling the Hoffman frames, as adapted to the Dovetailed hive, with its L. size of frame. I accordingly took a Dovetailed hive filled with Hoffman frames, and over it I struck several attitudes, and then had Mrs. Root photograph me in those positions. Our engravers have now reproduced them.

I will first show you a cut of three Hoffman

frames, without any comb in them, standing side by side, as if they were stuck together with propolis. This cut shows a little more accurately how they are made for the Dovetailed hive. The top-bars are  $\frac{3}{4}$  inch thick, and at the narrowest part are  $1\frac{1}{2}$  inches wide. This width continues until within  $\frac{1}{4}$  inch of the end-bar, where it then enlarges to  $1\frac{3}{8}$  inches scant.



HOFFMAN FRAME ADAPTED TO L. SIZE.

It does not seem to be altogether clear yet why the top-bar should widen out near the ends. I will explain again, that it is for covering up the wood rabbet entirely, so that the bees can have no occasion for chinking in propolis. We will suppose that the top-bar is  $1\frac{1}{2}$  inches wide its *entire* length, and that the end-bars are as shown in the cut. As these are spaced frames, it is evident that the top-bars will rest in the rabbet exactly in the same place at all times. In a few months' time, if the frames be all lifted out, the places in the hive-rabbet not covered with top-bars will be thickened and stuck up with propolis, and those covered by the ends of the top-bars will be comparatively clean. In process of time, especially with hybrids, these exposed places in the hives will receive further accumulations of propolis, until the ends of the top-bars, so to speak, will rest between the notches of beeg-lue. Now, the great "function," if I may borrow a term from Mr. Heddon, of the Hoffman frame, is a lateral sliding motion. With masses or notches of propolis placed at regular distances, this lateral motion is impracticable. "But," you say, "why is this not true with the ordinary loose frames?" For this reason: Loose frames are never put back exactly in the same place in the rabbet; and the result is, that the wooden rabbets are covered about equally with propolis from one end to the other. To avoid the regular masses of propolis, the inventor, Mr. Hoffman, had the top-bars enlarged at the ends, so that, when the frames are all in the hives, the rabbets will be covered up entirely. You may examine the wooden rabbets of hives that have had these frames for years, and you will find they are about as free and clean from propolis as they were when the hives were first made. This is not guesswork nor theory. I saw it in Mr. Hoffman's yard.

If you use tin rabbets you can get along very well with top-bars the same width throughout; but those of you who have had hybrids to any extent, know that they will sometimes fill tin rabbets level full with propolis, and then you have to go and dig it out again. By Mr. Hoffman's plan, the worst propolizing bees known are circumvented in the worst propolizing localities. If you use Italians and tin rabbets, you will never have any trouble about the rabbets being filled with propolis, and you could use the Hoffman frames with straight top-bars.

So much for the construction of the top-bar. There is no need of discussing the need of having a wide end-bar near the top. Its office in preventing the bottom-bars from knocking together during moving or otherwise rough handling, is too evident to need discussion.



## HOW TO MANIPULATE HOFFMAN FRAMES.

Mr. Hoffman has already given, better than I can, the advantages in the use of a spacing-board, or "follower," as we call it in our price list, so I will not dwell on that point. We will now proceed to open up a hive having Hoffman frames. One of the conveniences, and almost necessities, is a small screwdriver. This, or a good strong knife, is something that almost every apiarist uses nowadays. With a screwdriver or wedge I pry loose the flat board cover of the Dovetailed hive, having previously blown a little smoke in at the entrance.

The cover removed, I place the same under me, and sit down on it milk-stool fashion (see Fig. 4). You will observe that the cover is a seat on which we can lean backward and forward. This I find is a great convenience, in that the body can be leaned toward or from the hive; and, the elbows resting on the knees, they can support quite a heavy weight, in the

screwdriver or wedge, we pry apart the first pair or trio of frames, if the frames are not too heavy, and lean them against one corner of the hive, as shown in Figs. 4 and 5. Don't you see we pretty nearly handle the brood-nest in halves and quarters?

You will notice that these frames will hang together by propolis, and that the bees on the two inside surfaces are not disturbed at all. The loose frames, when out of the hive, have got to be leaned against one or two corners of the hives, against each other—in fact, be scattered all around for the depredations of robbers; and, besides all that, the liability of killing bees or the queen is much greater. This is a big point in favor of the Hoffman frames. If we do not find the queen on the frame in hive, pry off the outside frame of a trio leaning against the corner of the hive. If she does not appear on that one, pry off the next one, and so on.



FIG. 4.—HOW HOFFMAN FRAMES ARE MANIPULATED.\*

way of two or three Hoffman frames. You may argue that you would not sit down on the narrow edge of a  $\frac{1}{2}$  board for anybody or for any money. I will say in reply, that, in handling Hoffman frames, so short a time is occupied in examining the hive that no inconvenience will be experienced; and, besides, there is no law to compel you to sit in any one attitude over every hive. Comfort as well as convenience sometimes suggests a standing as well as a kneeling posture, though usually I prefer to sit down on a cover. Well, to return.

A little smoke is blown over the top of the frames. The wedge that holds the follower, or spacing-board, against the frames, is next removed; and while the wedge is in the hands, the follower is leaned against the hive opposite to where we are sitting (see Fig. 4). With a

If frames are heavy with honey, we may lift out only one frame. Having seen the surfaces of two or three combs, the practiced eye will get a pretty fair idea of the condition of the colony and what the queen is doing. If we see eggs and larvæ in all stages, as well as sealed brood, we do not usually bother to hunt up the queen; so we put back the second pair removed, and finally turn the trio as shown in Figs. 4 and 5. Now, as Mr. Hoffman explained in his former article, we generally crowd these frames together at once. We blow a little smoke down between each of the end-bars, and then with a quick shove see Fig. 1, in Mr. Hoffman's article, we close them all up again.

There is no cut-and-try spacing as with loose frames—no big and little fingers to get the distances at wide and narrow spaces. There is no continual instructing the beginner on just how far to space combs, and there is no finding the apiary afterward, with the combs spaced so far apart that spurs of combs are built where they ought not to be. No, with Hoffman

\* Although I sat for the picture, our engraver has very kindly put another head on my shoulders; therefore you will not detect any striking resemblance between your humble servant and the substituted head.

E. R. R.

frames the spaces have got to be exact, and the combs will have a fixed and definite thickness; and I do not hesitate to say that you can alternate them just as well, and even better, than you can many of the loose frames. Let me explain. Space the loose frame during the honey-harvest, anywhere from  $1\frac{1}{8}$  to  $1\frac{1}{2}$  or even  $1\frac{3}{4}$

Well, practically amounting to that; and he is an extracted-honey man at that.

### THE HETHERINGTON-QUINBY HIVE.

WHY QUINBY FRAMES DON'T KILL BEES.

[Continued.]

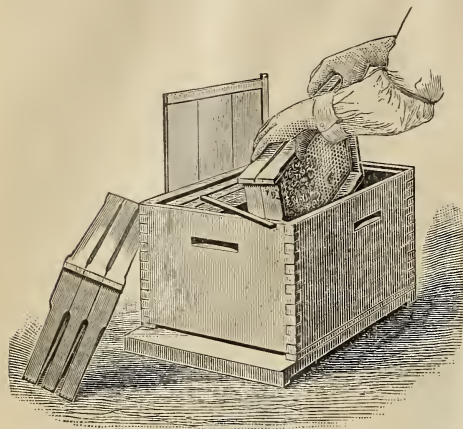


FIG. 5—HANDLING HOFFMAN FRAMES IN PAIRS AND TRIOS.

inches from center to center, and then, after the honey-harvest, try to alternate it with other frames placed a little closer, and see where you are. You may say you can space frames near enough right. Although I have visited many large apiaries, I never saw a loose-frame apiary spaced near enough right, unless it was Mr. Manum's home apiary. He is one of those precise men who are bound to have every thing just so.

Well, now, then, we will replace the follower, and with the wedge, as shown in Fig. 1 of Mr. Hoffman's article just preceding, we crowd the frames tight together; then the wedge is pushed down between the follower and hive. If the follower is only  $\frac{3}{8}$  of an inch thick it springs a little, and this will take up any unequal swelling or shrinking in the Hoffman frames (if there should be any) through changes of atmosphere, from extreme wet to extreme dry. If there are any bees on the tops of the frames, a whiff of smoke will usually drive them down, and then the cover is replaced with a sliding motion, which I have already explained.

Perhaps from my description about manipulating the hive with Hoffman frames, it may appear like a very long operation; but I can assure you that it is a very short one. Now, right here I will ask you to look at the italicized sentence (the italics are mine) in Mr. Hoffman's article just preceding. Observe that he says he can handle nearly double the number of colonies on his frame that he could on any loose frame; and I will add right here, that he used loose frames for years, until necessity, the mother of invention, caused him to bring out this style.

Mr. Hoffman makes another big point; namely, by removing two or three frames in a trio, the rest of the frames in the hive need not be lifted out at all. They can be slipped back and forth, and each surface examined; but if the rabbit is covered with pieces of propolis, this lateral sliding is not easily accomplished.

Mr. Manum proposes to handle some 400 or 500 colonies on loose frames alone. Why, bless you, Mr. Hoffman has been doing this for years on his close-fitting frames. "Alone," did I say?

In hooking frames together I have found some bee-keepers who, after using this hive for years, were still ignorant of the proper way of handling them. They pushed the edges of the frames together from the side in such a manner as to kill the bees between them; or, if the motion was slow enough to permit the bees to get out of the way, too much time was consumed in the operation. Now, the proper way is to bring them together as shown in the engraving, Fig. 2, when a half-inch motion in the direction of the arrow puts them in place, shoving off the bees from their edges instead of crushing them; that is, end-bar C slides the bees off the end-bar B. This is a very important point, and the proper observance of it makes all the difference between total failure and magnificent success in the practical working of the hive. It is a point, also, in which our hive is ahead of the excellent Hoffman hive, and all other closed-end hanging-frame hives. In these there is not room inside the hive for this longitudinal motion. I have known other bee-keepers to fail with this hive because it was not properly made. If the hooks on the frames are not put on right, or if the groove on the bottom of the board is too deep, there is nothing but vexation in store for the bee-keeper.\* In handling frames it is well to observe that we do not have to reach down among the bees to pick up a frame, but take hold of it at the outside, where there are usually no bees, thus saving time in picking it up, if

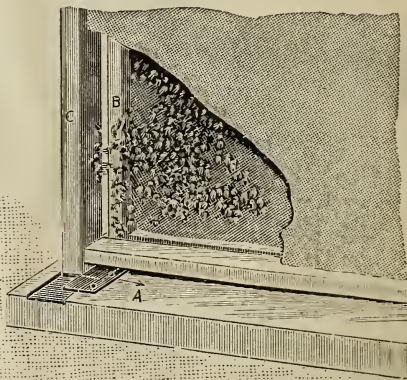


FIG. 2. HOW THE QUINBY FRAME AVOIDS KILLING BEES.

not always in letting go of the same. (See Fig. 1 in former article, p. 317.)

The day was dark and rainy when Mr. Root

\*In Fig. 3, C (re-engraved from Cheshire), it is shown correctly; *h* is the hook that engages the strap iron *op*, and *gr* is the groove in the bottom-board *bb*. This arrangement was designed by Mr. Quinby to keep the standing frames from toppling over, and also to hold the end-bars in alignment. The hooks are not on the outside of the hive proper, and hence do not kill bees; nor are they filled with propolis as some have imagined. *A* and *B* in the same figure are respectively the frame and follower. They are somewhat out of proportion.—ED.



and I visited the out-apiary. The colonies were populous, and the bees were all at home; in short, it was such a day as bee-keepers usually prefer to spend in the shop. The smoke-wood was damp, and the smoker refused to give out its usual volume of smoke until after we had finished our examination of the bees, after which it smoked exasperatingly well. Now, had our hive been difficult to manipulate, those hybrid bees would have stung us severely; but Mr. R. has already testified to their good behavior at this time.

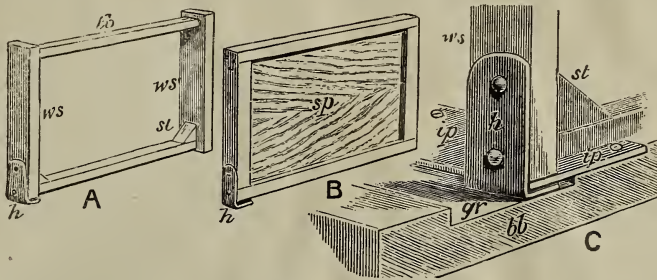


FIG. 3.—HOW THE QUINBY FRAME HOOKS ON TO THE BOTTOM-BOARD.

Our test of hives is very severe; for, during the swarming season, we do not stop for weather. No matter how threatening the weather, we start off unless it actually rains. We seldom start in a rain unless there is good prospect of its soon stopping. When there we work unless it rains too hard to safely open hives; and even then, when hard pushed, we complete our work under umbrellas.

#### WHY QUEENS CAN BE FOUND READILY IN QUINBY HIVES.

It is well known, that, in finding queens, a bright day is better than a cloudy one, and very much better than if it is alternate sunshine and shadow. That is, a uniform light free from shadows is best. Our hive is so constructed, that, when opened up, there are no sides to cast shadows on the interior (see Fig. 1, p. 317). When one comb is removed, the light striking the exposed side of the next is uniform, and not only less trying to the eyes, but queens are found more readily. Of course, you sit with your back to the sun. In the hanging-frame hive, the queen often steps off from the comb to the shell of the hive, and passes from there to the combs already looked over, thus making it more difficult to find them. At any rate, the claim has been made and substantiated, that, in the Quinby hive, queens are more readily found than in the hanging-frame hive. This is an important advantage; for, when queens are hunted, time is usually limited.

One morning, after Capt. Hetherington had started off his men and wagons to the out-yards, he jumped into a buggy and drove to a yard of about 70 populous colonies. He clipped the queens in this yard, and from there proceeded to another yard, clipped the queens in this also, and returned home in time for an early supper. This is not mentioned because it is thought rapid work, but to show that our hive is not a slow one when worked by a fast man. Many a man who calls our hive a slow one to manipulate would have taken twice this time with his own. Of course, it takes time and practice to learn how to manipulate any hive.

#### ADVANTAGES OF CORRECT SPACING.

One thing that does not have to be learned with us is to correctly space frames, which requires much skill and time; and to space loose frames  $1\frac{1}{2}$  inches or less, without destroying

brood, requires more patience than the average bee-keeper possesses. A single glance at the bottom of the frames of the common swinging-frame hive will convince any one that its owner should speak authoritatively on proper spacing, for he has all distances, from  $1\frac{1}{4}$  inches up. This is the man who says, "No fixed distances" for him. Thick irregular combs, of which he has plenty, and knows no way of curing, except to cut them down with a knife, he thinks best not to crowd together, but will often take nearly two inches to space such combs. He can do no

better; for, if the honey is crowded together at the top, it usually throws the bottoms apart and against the next comb.

#### CAN FIXED FRAMES BE ALTERNATED?

*Neither Mr. Hoffman nor ourselves are troubled in spacing irregular combs—he at  $1\frac{1}{2}$  inches, and we at  $1\frac{1}{2}$  scant. With foundation carefully placed in the center of frames, and with combs always the same distance apart, we do not have so many bulged combs.\** In the spring, brood-combs are oftener interchanged than at any other time of year; and at this time I have experienced no unpleasant results from crowding honey up against honey, as occasionally happens, for it gives the bees a chance to cut down the combs to their proper thickness at a time when they can use the surplus wax to advantage. After swarming time, the less the brood-nest is disturbed, the better; for bees have a way of fixing themselves for winter that man can not improve upon.

#### CLOSED ENDS FOR WINTERING.

Mr. Quinby tested this hive for many years in wintering, and was satisfied with it. For several years before he died, his average loss in winter was less than two per cent, and this with the most disastrous loss around him. Capt. H., in his cold climate, also winters well in it. With a bottom entrance (see Fig. 1, p. 317) as I make it, this hive may prove also best for wintering in the South. The trouble in the South in winter is, that bees fly out, and many are lost on sunny days, thus weakening them too much. With a shade-board on top of our hive, bees would not fly nearly as much as from the hive in common use. Capt. H. prefers and uses a front entrance, as did Mr. Quinby, and this is undeniably better at certain times of the year; but for winter, and also for hot weather, I prefer the bottom entrance.

#### HOW BEES ARE KILLED IN LOOSE-FRAME HIVES.

Mr. Root has already told you how few bees are killed in working our hive. There are some killed with every hive, but in the hanging-frame hive the killing and maiming take place largely out of sight. When frames are not raised or lowered perpendicularly, either side-

\* Italics are mine.—E. R. R.

wise or endwise, the work of destruction goes on from combs rubbing or hitting each other, or from frames scraping the side walls of the hive. Also quite a few bees are crushed on the rabbets.

There is no need of looking for all the good points in any one hive, for such will not be found; but, rather, as in selecting a harvesting-machine, look for a good combination of the best features of many. In writing this I am not endeavoring to prove that this is the only hive fit to use, for there are many such. I wish to show that this hive has many good points, some of which it has never had credit of possessing. I believe the day of unspaced frames is drawing to a close, and that the use of spaced frames is to become quite general, either with open or closed ends, or a compromise between, as Hoffman makes them. P. H. ELWOOD.

Starkville, N. Y., Feb. 26.

[Now that the merits of the Hoffman and Quinby frames have been fairly presented with engravings (the two best fixed frames, as I believe), the beginner, in view of the merits inherent in each, may be somewhat confused as to which one he should adopt, or whether, forsooth, he should choose either. In the first place, at the risk of using an old stereotyped expression *ad nauseam*, I will urge again, go slow. What may suit one may not suit another. Try a few and decide for yourself. As between the Hoffman and the Quinby systems, perhaps I should make a suggestion right here. As ex-President Cleveland once said, "We are presented with a condition and not a theory." No

Perhaps I should add that, in my eyes, the Hetherington-Quinby hive does not look as neat as the hanging-frame hive. Here is a Kodak view that I took of one of the hives when the bees stung me so unmercifully, and caused their owner to retreat on a double-quick pace.

This shows one of Mr. Elwood's hives rigged for comb honey. It seemed to me when I first saw these hives, that they would tip over very easily, being in appearance somewhat top-heavy. Mr. Elwood assured me, however, that no such mishap had ever befallen them. A stray calf once got into the apiary, and I presume, on account of the disposition of those buckwheat hybrids, he became a little "rambunctious." At any rate, he tipped over one of the hives; but no damage was done.

I might add, further, that a plain box with hanging frames, either fixed or loose, tiers up a little nicer than a series of closed-end frames with panels for sides. Moreover, the feature of *hanging* frames, whether at fixed distances or not, is something that the most of us familiar with it would be very loth to give up. The Hoffman is a hanging frame and has nearly all the advantages of the Quinby, with some others peculiar to itself; and I may add that the closed-end frames have advantages peculiar to them not found in other styles. Supply-dealers are willing to give bee-keepers whatever they demand, and therefore leave the matter largely for them to decide.] E. R. R.

### HANDLING FRAMES.

THE GENERALLY ACCEPTED METHOD: A HINT TO BEGINNERS, FROM C. A. HATCH.

As you are going to have handling of frames with fixed distances in GLEANINGS, why not have handling of other frames also? That every bee-man is not proficient in handling frames of even his own hives, I was convinced by acting as judge at our State Fair a few years since. A premium was offered for best method of handling bees; and, as I now remember, there were four contestants, some of them veterans, and yet two of the four broke out combs or cracked them badly in handling, simply to find the queen. Another thing that convinces me that all have not the knack of handling L. frames rapidly, is, that they use metal corners, which entirely prevents rapid manipulation in hunting for queens, examining brood, or any operation where single frames must be handled. I had a talk with Prof. Cook once on this subject, and I found he used the same method as here described in instructing his bee-class, and so the method has good indorsement.

The right side of the hive is rather the best position to operate from, for then you can hold the smoker in the right hand to throw smoke into the entrance, and you can set it on the ground near by, and it is easily reached by the proper hand to use. After having subdued the bees, take your screwdriver, or whatever tool is used for loosening the frames, in the right hand, handle up and thumb up, as if it were a dagger and you were going to stab. Take the frame next to you. First loosen by pushing the screwdriver handle from you, while the point is between the frames; grasp the frame at the other end with the thumb and forefinger of left hand at same time, and usually the frame will be loosened. Now take the right-hand end in the same way; and as you bring it up straight out of the hive, move each thumb under the projection of the top-bar, so that its whole weight will come on the ends of the thumbs

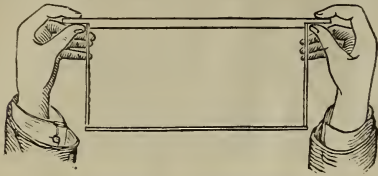


HETHERINGTON-QUINBY HIVE.

matter how much we may *desire* to adopt the Quinby system in toto, a great majority of us have on hand our old-style hives that are adapted for *hanging* frames, and these old hives we can not afford to throw away. If we make any change at all, it will, of course, be wiser and cheaper to adopt the Hoffman frame, because it can be so readily adapted to hives already in use; whereas the closed-end frames on the Quinby system, with its hooks, would require a change throughout. In view of the arguments that have been presented for both systems, it is pretty hard to decide which one we like the better; but the aforesaid condition, namely, old hives already in use, should influence the decision in favor of the Hoffman frames.



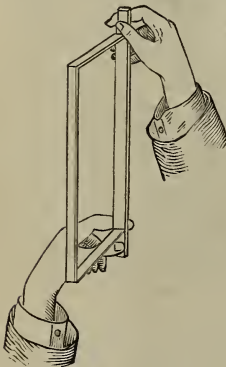
while the fingers serve to steady it on the side from you. This brings the frame in front of you so you can examine one side. This we will



FIRST POSITION.

call the first position, and here is where most mistakes are made. In order to get to the next position the bottom-bar is either brought toward the operator, or it is turned away from him until the opposite side of the frame can be examined. In either case the comb is not properly supported by the frame; and if new, and the weather warm, it is liable to drop out by its own weight. The position is also trying on one's hands and fingers, which might not be noticed on a few hives, but will tell in a trying way where it is followed all day.

There are usually but three parts of a frame to be examined; viz., two sides and the bottom. Unless the colony is unusually strong, no bees will be on the end-bars; so all we want is three positions of the frame to have it all gone over. We have given the first, and now to get the second. To examine the bottom, raise your right hand, keeping the thumbs in the same position, also lower left hand at the same time, and bringing it toward you also until one hand, the right, is directly over the other, the frame standing on end. While raising your right hand, allow the bottom of the frame to swing toward you. This will give you the second position to examine the bottom.



SECOND AND THIRD POSITIONS.

The third position is got by allowing the frame to swing around to the left, like a door, the top-bar serving in place of hinges. After this side of the frame has been examined you can let it swing on around, and you have it ready to put back into the hive in just the same way it came out, so far as the frame is concerned; but you are holding the frame in an entirely different way, as it now rests on the second joint of the first finger instead of on the thumbs, the latter being on top of the frame instead of under, as at starting. It is a kind of sleight-of-hand you have performed, but not hard to learn when one sees it done, but not so easy to put on paper. It always keeps the comb in a perpendicular position, so it can not fall out, if never so brittle or weak, and yet every side has been toward you, and the hands have not been changed nor the frame laid down. If you have never handled frames in this way, try it; or if any one has a better way, let him come forward and explain it.

C. A. HATCH.

Ithaca, Wis., April, 1891.

[Your method of handling frames, friend H., is the same one that we use, and I think it is generally accepted as the right one, especially, if the frames are unwired, and combs are ten-

der. In either case, if they are very heavy it is almost a necessity, in order to examine both surfaces, to handle combs on the swinging-door plan. Your instructions will apply exactly to the Hoffman frames, with the exception that they would be handled more in pairs, and the two outside surfaces could be examined the same way that we examine the two surfaces of a single comb. Closed-end frames on the Quinby plan are handled by the centers of the end-bars; and the weight, instead of being supported on the fingers, is held by the whole hand.]

## PLANT-LICE AND THEIR PARASITES.

PROF. COOK TELLS US WHEN AND HOW TO FIGHT THEM.

Mr. Edward J. Knebel, Spring Branch, Tex., sends me by mail some insects which are very destructive to cabbages, mustard, and other cruciferous plants. He desires me to comment upon them in GLEANINGS, and desires to know whether it is possible to destroy them without injuring his plants or endangering his bees.

These insects are the common cabbage aphid (*Aphis brassicae*, Linn.). It is quite common all over our country, and at almost all seasons when these plants are growing. Even in winter it may be found on cruciferous plants in our conservatories. Like all plant-lice it increases with remarkable rapidity, and so, very often, the plants will be covered with the lice. More than this, like all aphides it is very harmful, so that plants attacked are sure to languish and even to die if the lice are very common and abundant. Fortunately these and all plant-lice are very subject to attack from parasites, species of a minute *braconid* fly. These flies lay their eggs in the lice, and their young feed on and destroy the lice. Rapid as is the development and increase of these lice, yet they are eclipsed in both respects by this tiny parasite. While they run up to thousands in a few days, the parasites increase to tens of thousands in the same time. How strange! A tiny insect, hardly as large as a pin-head, overcoming an enemy so mighty, that, if left undisturbed, it would bring famine and want. Yea, it would often desolate the earth.

If Mr. Knebel will observe closely he will find many lice on his plants—that is, if the parasites have not already wiped them all out—which are short and globular, and of quite light color. These all harbor the *braconids*, and thus their doom is sealed. Instead of bearing young, they will soon die and give rise to a fly that will victimize scores of lice. Of the aphides sent, I saw many of these rotund light-colored lice, and so I feel sure that Mr. K.'s plants will soon be freed of the pest that has sought to destroy them.

I presume Mr. K. will need no remedy other than that which nature has provided; but as he asks for one, I will give it in the kerosene emulsion, which is entirely safe. This is made as follows:  $\frac{1}{4}$  lb. of soap is dissolved in a quart of boiling water. To this, while still hot, 2 quarts of kerosene oil are added, and all violently stirred till permanently mixed. It now looks like rich cream, and will not separate upon standing. For all plants, add water till one fourteenth of the whole is kerosene. Stir a little, as all unites freely. Apply to plants affected with plant-lice, with pump or syringe, as the liquid should be thrown on with *much force*, so that every louse would be struck. This is also good for vermin or lice on cattle, horses, and dogs. In this case we add water till one-eighth is kerosene. That is, it should be strong-

er. Now wash thoroughly, on a warm day, the horse or cow, and use a syringe to treat the hog, which, from its more sparse hair, is more easily reached. Cattle, etc., can be treated in cold weather by blanketing warmly as soon as the washing is completed. The advantage of this is, that it kills not only the lice but the nits, or eggs, as well; and if thoroughly done, it vanquishes the foe. The proportions of the above, as will be seen, are different from those I have usually given. This is Dr. Riley's method, and makes easily a more stable mixture. This liquid is one of our most valuable insecticides.

Agricultural College, Mich. A. J. Cook.

### WINTER CASES.

WHAT ARE THE ESSENTIALS TO MAKE THEM A SUCCESS?

Now that the light thin-walled winter cases are about to come into general use for spring protection and for wintering, many would perhaps like to know how my bees have wintered in them. I have about 50 colonies in winter cases, a good part of which have been in use for five years. I have never lost a colony in them. The past winter was very wet and damp; and early in January I discovered that the excelsior packing was getting too damp for safe wintering. So, the first day the sun shone clear, I took out the packing and dried it, and some that was very damp or wet was replaced by new and dry packing. In February and March, one day in each month was selected, and the hive covers and packing removed again, and dried out by the sun and wind. For the past five weeks it has been excessively damp and cool, so that, up to the present time, April 8, no pollen has been gathered, and the bees have been out but little. There are now many young bees, and every colony is strong, and in the best possible condition. Many of the colonies have not lost a bee, so far as can be seen, seeming to hibernate most of the winter.

My belief is, that perfect quiet and perfect wintering can not be had in outdoor wintering unless the hives are warmly packed in winter cases, and the packing kept dry. I think, also, that, to bring the combs through the winter, free from mold and dampness, there must be some upward ventilation, but no free upward ventilation, as where the air can pass freely over the packing. My plan has been to lift the back end of the thin inside cover used on my hives about Nov. 1, and insert a thin wedge; then pack freely about and over the brood-chamber, and shut the cover of the winter case down as tight as it will go. This prevents any loss of heat from the cluster of bees, brings the combs through the winter bright and clean, and the bees in the most vigorous and healthy condition.

The only objection that can be urged against the plan is, that the packing may become damp and finally wet, and is apt to result in the loss of the bees if not attended to. On the other hand, if free currents of air are allowed over and about the packing, there being a little upward ventilation so the combs will not become moldy, the packing will do little good in the way of protection; and in a long cold winter many colonies will be lost from dysentery, etc.

If we leave the upper parts of the hive sealed up tight as the bees will naturally do, we shall get moldy combs in the lower part of the hive, if we pack the bees with absorbents, except there be extensive and free bottom ventilation; which, however, does not result in as good wintering, or in as good condition of the combs, as the plan advised. For myself I prefer to deal

with the damp packing rather than with sickly bees and moldy combs. Moreover, I have found it less labor and trouble than any other mode of wintering I have tried.

As to winter cases and dead-air spaces about the brood-chamber, I fully agree with Mr. J. A. Green, Mr. Doolittle, and others. It is better protection than none, but vastly inferior to good packing rightly managed. G. L. TINKER.

New Philadelphia, O., Apr. 8.

### PROTECTION FOR BEES.

WINTER CASES AND PACKING DURING THE YEAR; MINERAL WOOL AND ITS NON-CONDUCTIVITY OF HEAT.

I have for some time been convinced of the inutility of chaff, cut straw, cork shavings, etc., used as a protection in wintering bees. In the winter of 1889, chaff was used to pack a number of colonies, and spring dwindling and moldy combs resulted in several instances, while a few hives packed in wheat bran came through in fine condition. The bran packing, presenting a bait for vermin, was abandoned. This summer my attention was attracted to a new material, and I resolved to test it. I now have my colonies all packed snugly, and ranged on the four sides of my large strawberry-bed. The case is made of good  $\frac{3}{4}$  pine lumber; the sides of flooring; the bottom and ends each of one piece; the top, two boards cleated on the ends, and the crack coated with white lead and covered with tin four inches wide. The case is intended to accommodate the Dovetailed hive. It gives a space of  $1\frac{1}{2}$  inches on the sides and 2 on the ends, while the height will allow of the placing of a super to hold the chaff cushion. Three coats of white-lead paint renders the case impervious to water—first, however, putting all cracks and holes. The top is held in position (a necessary precaution against our mountain storms) by two Van Deusen clamps, one on each side of the cover, which projects  $\frac{1}{2}$  inch over the sides of the case. That the clamps may lie closely to the case, a semicircular hole, embracing two-thirds of the thickness of the cover, is bored for their reception in the sides of the cover, and the hole enlarged on the lower aspect for the better play of the clamp in locking and unlocking. The bottom-board is not nailed, but fits *within* the case. The case may be removed, and the packing gathered up from around the hive.

The entrance to the hive is left wholly open; but the opening in the case is  $\frac{1}{2} \times 3$  inches, usually. This may be enlarged or wholly closed by a convenient slide. The edges of the case immediately under the cover have strips of woolen cloth tacked down, so that, when the cover is placed and clamped down, it is water-tight. Ventilation, if thought necessary, may be provided for as in the Simplicity hive, by holes in the end-boards under the cleated cover, which projects sufficiently to afford protection in blustering, rainy, or snowy weather. The hive is now placed inside and packed with *mineral wool*, or silicate cotton, as it is called in England. The wool should be picked apart and packed loosely but firmly, and care taken that the fibers be not broken by the force applied.

I wish to call attention to this mineral wool as the *ideal* material for wintering bees, not only in cases on their summer stands, but in suitable buildings with double walls, ceiling and floor, with a three or four inch space packed with the wool. Bee-cellars would then be a thing of the past.



I give the following experiment, which first attracted my attention to this material, to show that my claims for mineral wool are not founded on theory alone:

MEMORANDUM OF A TEST OF INSULATORS MADE AT THE PACKING-HOUSE OF ARMOUR PACKING CO., KANSAS CITY, MO., FROM JULY 15TH TO JULY 19TH, 1886.

Three boxes were made, with inside measurements of 18 inches square and 14 inches high.

Box No. 1 was insulated with lampblack.

Box No. 2 was insulated with four dead-air spaces, paper lined.

Box No. 3 was insulated with mineral wool, 2½ inches thick.

At 10 o'clock a. m., July 15th, there was placed in each box 75 lbs. of ice, in one piece. At the end of 48 hours, and again at the end of 96 hours, the ice was weighed, with the following results:

	After 48 hours.	After 96 hours.
Box No. 1, lampblack.	46½ lbs.	22½ lbs.
Box No. 2, dead-air spaces, 47 lbs.	23¾ lbs.	23¾ lbs.
Box No. 3, mineral wool, 52 lbs.	34½ lbs.	34½ lbs.

The above test was made in the presence of G. W. TOURTELLET, Supt., and JOHN THOMAS, Builder.

Mineral wool is a vitreous substance, converted to a fibrous condition while in a melted state. It is made from furnace slag, scoria, and certain rocks. It presents the appearance of a mass of very fine fibers interlacing each other in every direction, thus forming innumerable minute air-cells. We thus get, not *one* dead-air space, as in double-walled hives, but millions of them! Mineral wool partakes of the nature of glass without its brittleness, the fibers being soft, pliant, and elastic. It appears in many colors, principally white, but often gray or yellow, and occasionally quite dark; but the quality of the wool is not at all dependent upon or affected by its color.

One of the most important qualities of mineral wool is its unequalled power to resist the transmission of heat and cold. This can readily be accounted for by the fact that it holds in confinement a greater quantity of air than any other material. Air is so subtle and rapid in movement, when unconfined, and is so slow to carry heat, except by its own motion, that it is at once the best distributor of heat and also the greatest barrier to its transmission, according as it has or has not freedom to circulate.

The substance under discussion affords 'an efficient protection against the insidious attacks of Jack Frost, as well as a perfect insulation of sound. It is used in all the Pullman cars for the last-named purpose. Owing to its composition (an analysis showing it to be a silicate of magnesia, lime, potash, etc.), it gives no protection to animal life, doing away with the mice, insects, moths, and their attendant evils and disease germs. There is nothing organic in the material to decay or become musty, or to furnish comfort and food for vermin.

As has been said, mineral wool resists the transmission of heat more completely than any other material that can be used for our purposes. It thus affords warm and dry quarters during the winter months, and cool hives in the torrid time of summer.

I append two tables, the first by Mr. Coleman, of the Philadelphia Society, of Glasgow, and the second from Roper's "Handy-Book." Both are abridged.

I hardly need say, that I have no interest in writing this, further than to offer something that is at once cheap and efficient to the bee-

#### HEAT-CONDUCTING POWER OF MATERIALS:

Mineral wool, - - - - -	100
Hair felt, - - - - -	117
Cotton wool, - - - - -	122
Sheep's wool, - - - - -	136
Sawdust, - - - - -	163
Wood and air-space, - - - - -	230

#### NON-CONDUCTING PROPERTIES OF DIFFERENT MATERIALS OF EVEN THICKNESS:

Black slate, - - - - -	100
Soft chalk, - - - - -	48 to 56
Sawdust, - - - - -	17 to 20
Fine asbestos in thread, - - - - -	13 to 15
Mineral wool, extra, - - - - -	8 to 13
Raw silk, - - - - -	8 to 13
Ice, - - - - -	0

keeping fraternity for the uses and purposes mentioned. The ordinary mineral wool weighs 14 lbs. per cubic foot; 1½ lbs. per square foot, 1 inch thick. It sells at \$1.25 per 100 lbs. Select wool weighs 10 lbs. per cubic foot; 1½ lbs. per square foot, one inch thick, and sells at \$2 per 100 lbs. Of the latter grade, 140 lbs. packed 18 cases of the dimensions given in this paper. There is an extra grade of the wool, which weighs 6 lbs. per cubic foot; ½ lb. per square foot, one inch thick, the price of which is \$3.50 per 100 lbs. The foregoing prices are for small lots. The packing could be employed more economically by packing the brood-chamber only. The packing in my cases is at the top of the added super. Samples of the wool may be obtained by writing to the Western Mineral Wool Co., at Cleveland, Chicago, or St. Louis.

#### HOW TO ESTIMATE.

After a rough calculation of the number of cubic feet of space to be filled, find the weight of *ordinary* required, by multiplying by 14, and the weight of *extra* and *selected* wool by multiplying by 6 or 10, according to the grade to be used.

J. B. ENOS, M. D.

Connellsville, Pa., April 6, 1891.

#### SIZES OF FRAMES, AGAIN.

##### SHOULD THERE BE TWO STANDARD FRAMES?

I read with interest the article on sizes and styles of frames, by W. T. Stewart, and your comments on the same. I believe there should be two standard frames in use—one for the production of comb, and one for the production of extracted honey. Why? Because, for the best result, we need, for the production of comb honey, a small frame; for extracted honey, a large one is better. One frame will not answer satisfactorily for both purposes. I use the crosswise L. frame, and believe it to be as good as any in use for the production of comb honey. I have tried different sizes of frames, and they suit me the best. They are lighter and better to handle than the lengthwise frame. The queen fills the comb better with brood. You can shake bees off from the comb quicker and better, with less danger of racking the frame or breaking the comb—especially the latter—in very warm weather. The hive entrance is at the side, where I believe it should be. You say the trouble with the crosswise frame is, it does not hold comb enough. If working for extracted honey you are right. Neither does the lengthwise frame. If working for comb honey it holds plenty, and the lengthwise holds too much comb. It is true, with the crosswise we have more frames to handle; but, being lighter, we can handle them more rapidly. The lengthwise frame is heavy and awkward to handle, unsuitable for the producer of comb honey. Perhaps two-thirds of those using it never used any other; and perhaps most of them, if they once used the crosswise frame, would use it in preference to the lengthwise. Why is it that the majority of the large honey-producers do not use the lengthwise frame? Because it is not suitable for either the comb or extracted honey producer. Here is Mr. A. He produces comb honey. He uses the hive and frame best adapted for the production of comb

honey. He makes them himself, but would rather buy them ready made, but can not because there is but one standard hive and frame in use. They are not suited to his wants, because they are not any better for comb than extracted honey, and are not adapted to the production of either. And may be it is the same with Mr. C. who produces extracted honey. Perhaps the frame used by the Dadants is as good as any for the extracted-honey producer.

N. T. HOLMES.

Fowlerville, Mich., Mar. 24.

[Friend H., the crosswise L. frame has, at several times, had a run; but as the majority of bee-keepers seem to let it go sooner or later, and come back to the old long frame, I can not think it offers any great advantage.]

### T SUPERS VS. WIDE FRAMES.

DR. MILLER TELLS US HOW HE TAKES OUT THE SECTIONS ONE BY ONE AS FAST AS THEY ARE CAPPED.

On page 232 W. S. Douglass has a word about them, and I suppose there are a good many who find the wide frames, in their hands, better than the T super. Much depends on the way a thing is used.

For the benefit of Mr. Douglass and others I will now describe the plan I have used for some time, to take single sections out of a T super, without taking the super off the hive. I thought of doing so some time ago, but had about given it up, with the thought that, if followers and wedges in T supers came into general use, there would be no special plan needed. Still, it may be useful to a good many.

You may remember, friend Root, a tool that I took to the convention at Madison a year ago, and then forgot to show. Well, I send it herewith.

I have pulled sections by the thousand with the identical one I send you. I'll tell you how to make one. Go to your tinner and tell him to cut a piece of No. 11 wire about a foot long. Straighten it. Bend the wire at right angles about an inch from one end. Make another right-angled bend, a quarter of an inch or less, from the same end. I'm not sure which of these bends should be made first. The end of your wire is now shaped like the bottom part of a capital L (see cut). But the end is blunt, and must be filed down to a cutting edge like a chisel. Your chisel edge will, of course, be the size of the thickness of your wire—a little more than  $\frac{1}{8}$  of an inch. Now for a handle. Make a curved bend at the other end of the wire, about three inches from the end, so that it shall form a semi-circle at the end, an inch in diameter. This leaves about two inches of the end straight, and I don't know whether it is better to have this two inches parallel with

the main wire or to have the end come within  $\frac{3}{4}$  of the main wire. The bends at both ends are all made in the same plane, so that the hook will lie flat upon a table without any part projecting upward.

Another tool is needed. Take a common steel table-knife, and make it square across the end by cutting off the rounding part. Make this square end about as sharp as the cutting edge of a table-knife usually is.

Now we'll go to the hive, and I'll show you how to pull out any desired section. Take off

the cover and give the bees just enough smoke to drive them out of the way a little. There are separators in the super, and on top little separators  $\frac{1}{2} \times \frac{1}{2}$  inch, 12 inches long, to keep the ends of the sections apart. Now run the knife across at each end of the section, to loosen the little separator from it. I must confess that I usually use a third tool for this, the big blade of a pocket-knife. Now run in the case-knife at each side to the bottom of the section, so as to loosen the section from the separators. Put your hook down between the section and separator, and give it a quarter turn so as to let the hook run under the section. I have a bit of string tied on the wire, so as to show me when it is pushed just deep enough to turn the hook. If the hook is not in deep enough when turned, of course it will dig into the honey. A ring of bright paint might be better than the string, for it would never slip out of its place. I think you will understand the rest. Like a bureau drawer, it may pull out straight; but very likely it will need starting at each end. When you get the section out, just grasp across it with the thumb and fingers of one hand and give it a few rapid whirls, and every bee will be thrown off.

Now, that looks like a good deal of fuss to read it, but it doesn't take as much time as you probably imagine. I think I can take out a single section, or several sections, from a T super in less time—a great deal less time—than out of a wide frame. You see, there is no frame to take out—nothing but just the section. In fact, if you loosen the super you will find it much harder to pull the section. Sometimes I have taken out the sections without the hook, merely loosening them with the knife and then pulling them with the fingers; but every now and then the bottom-bar of a section would pull off, and I was glad to go back to the hook.

The objection made by the editor, in the footnote, is a valid one, that sections left on the hive for a long time will have a soiled, travel-stained, yellow appearance. But they should never be left on after the harvest is over; and in a poor season, when nothing is put in them, I think they come off about as bright as if they had been in a wide frame. You know, the bees don't go into the glue-business (at least they don't here) until the white-honey season is over. Indeed, if you take into consideration the whole surface of a section, or, in other words, its total appearance as viewed by a purchaser, the section out of a T super is the cleaner. In the wide frame, a heavy streak of propolis is crowded in just as far as the bees can push it all around the section. This they have no temptation to do in the T super, for there is no crack.

You say, friend Root, that an enameled cloth can be laid flat on the section tops in wide frames and section holders. I don't see what good it would do in wide frames, for it would cover only the top-bars, and I'm sure it could be put on a T super just as well as on section-holders. But don't you know that it would make matters a good deal worse in either case? If you want to see the tops of sections thoroughly daubed with glue, just lay an enameled cloth flat on the sections toward the end of the harvest. The bees are busy trying to fill up cracks; and as fast as they push in propolis under the cloth, the cloth is raised up, making more space to fill; and if glue is to be found at all, you will find it there in plenty.

C. C. MILLER.

Marengo, Ill., March 20.

[Very good, doctor. I am glad you have got around to describe the implement. It interested me, because I am sure the handsomest honey can be obtained by selecting here and there the sections about as soon as they are wholly capped.]



## THE NEW WATER CURE, HOME PAPERS, GLEANINGS, ETC.

SOMETHING SENSIBLE FROM S. I. FREEBORN.

I have read carefully the article on page 183, and, I hope, with profit. It might be urged by some, that the article in question is foreign to the bee-interest, and therefore should have no place in a periodical devoted specially to the interest of bee-keepers. The same objection might be and has been urged against the Home Papers; but A. I. Root has said, by way of apology, that he gives us our money's worth in bee-literature, and throws the rest in, all of which I am willing to admit, and he has my consent without the asking (especially as long as he throws it in), to make GLEANINGS as valuable and necessary to us as possible. He has been most fortunate (or I have) in that he has chosen topics, aside from the bee-interests, in which I am vitally interested. The Home Papers have proved instructive, and a spur to action in the right direction. Ministers have expressed to me their appreciation of them, and said that the reading of the Home Papers had better fitted them to care for those over whose spiritual interests they were called to watch. Give us the Home Papers, Bro. Root. What can be of more importance than our eternal welfare?

Referring to the horticultural department in GLEANINGS, this also hits me right; for in this line I attempt to get what bread and butter bee-keeping fails to supply.

In reference to the new water cure (for this I most designed to write, though it is not new by any means), it was practiced to some extent 30 years ago in this neighborhood, and then as now was considered of benefit, but had almost become a thing of the past till revived by Wilford Hall & Co., who claim to have distributed 300,000 copies of their pamphlet, and received 14,000 testimonials commendatory of its efficacy, within the last 18 months. This might at first sight look like a gigantic swindling scheme. Allowing that they gave away a third to ministers and those who were unable to purchase, and there would be left 200,000 paying customers at \$4.00 each. This would amount to the enormous sum of \$800,000, which a suffering and gullible public have paid for that which was already free to all who cared to use. We must not be too hard on "Hall & Co.," for the probabilities are that they have done the public a kindness; for what costs nothing we are apt to consider lightly.

That the so-called new remedy will accomplish all or *half* that is claimed for it, I very much doubt; but that it will prove palliative, and a benefit to large numbers, I fully believe. The world is sick. A. I. Root says: the \$800,000 paid Hall says so: the millions squandered every year on drugs and patent medicines say so: the army of health-seeking pilgrims that yearly are seeking what they have lost, in Southern California, Florida, or some other so-called health-resort, bear evidence that we are truly sick. We all like sheep have gone astray; and the question may well be asked, as it was of old, "Who has sinned, this man or his parents?" We say both, calling "this man" this generation, and the past his "parents." With all the accumulation of knowledge and boasted advancement of the age, we are behind the cattle of the fields in the matter of health. Who has heard of a short-horn steer having dyspepsia, or a Jersey cow with sick-headache?

Don't you think, readers, that, if they were obliged to eat and do as their masters, they would have both, and the thousands of other

evils that humanity is subject to in consequence of their transgressions? The steer eats grass, hay, and grains, as designed by nature to do; his wants are few and simple, and easily supplied, and, as a rule, he remains healthy. But his master (man) can not supply his wants so easily, especially his *imaginary* wants. He must bring nuder tribute all living things, of sea, earth, and air. At present, in civilized countries (especially in the U. S.), such a glutton and physical sinner has he become that the old list of diseases was not long enough, and more names had to be added to express and explain the new agonies and troubles.

To illustrate how far we have left the path of purity and nature, let us take the horse for an illustration. Suppose, Bro. Root, that you had a valuable young horse with indications of becoming a second Axtel, and that you had engaged an intelligent horseman, a regular expert, to take charge of him. What would the groom say, if, at the time the colt was to have his first feed at his hands, you should say, "Hold on! I am very particular about the rations fed my horse. Any thing that I eat is none too good for him. Here is a tin of hot rolls; some slices of fat bacon with mustard and pepper; pickels; a mince pie, and some strong coffee?" The groom's eyes no doubt would be distended to their fullest capacity, and he would remonstrate by saying, "My dear sir, with all due deference to your judgment and manner of feeding, if you expect me to take charge of and be responsible for the appearance and actions of the colt I hope you will allow me to have my way in feeding, for I can assure you he needs none of the things you mention, to make him a healthy colt; in fact, he won't touch the bacon, mustard, and coffee." You could tell him that children won't eat such things till educated to it by their elders; but by judicious mixing and coaxing, in time they can be brought to it, and so can the colt. The groom remains obstinate, and declines to serve you if you insist on this absurd kind of ration, and says a ration of pure water, and good hay and oats, will make a better horse of him; he will live longer, look better, and, in fact, be better on his rations of oats and hay than he would on all the mince pie and fat bacon in America. What intelligent horseman would doubt his word? In place of a colt we will substitute a boy in his teens, and, by leaving out the hay and preparing the oats right, the boy would live longer, and be of more use to himself and the world, than he would on the pie condiments and bacon diet.

Much has been written on tobacco and the liquor-traffic. What is wickedly squandered on these evils would feed the needy of Europe and America. A man may be free from the use of liquor and tobacco, and still not be as temperate as he should be. Have we any better right to kill ourselves by eating hot rolls and mince pie than we have by drinking liquor? If we are temperate in some respects, does it give us the right to gluttony in others?

Now, Bro. Root, as you have done a good thing for us in the past in helping us produce many things for our comfort and pleasure here, as well as directing us to find the way to a better country beyond, I earnestly hope that you will direct your efforts, and teach us how to live so we need not be sick all or part of the time, but that good health may be the rule and not the exception. To that end we suggest that you invite correspondence on this subject, that the readers of GLEANINGS, especially the young, may get ideas and information that will enable them to escape and steer clear of the wrong habits that have wrecked their elders.

Ithaca, Wis., March 26.

S. I. FREEBORN.

**HIVE-WEIGHTS.****WHY THEY ARE AN ADVANTAGE.**

During a large part of the year I prefer to keep on each hive a stone or brick, weighing 12 or 15 lbs. In the winter this is almost a necessity, to keep the covers from blowing away. We get winds here sometimes that send such things sailing unless well weighted down. Even the covers of your chaff hives are frequently blown off. It seems to me, too, that I have read about the boys at the Home of the Honey-bees having been obliged at times to race out into the rain to replace covers. In inclement weather the absence of the cover for a few hours, say until the interior of the hive has been saturated with rain, and then frozen, is apt to result in the ruin of the colony. In the winter, when the apiary is not constantly under my eye, I can not afford to run this risk.

Except during the warmest summer weather, a bee-hive is better for being closely sealed at the top. Especially is this the case in the spring, when we should be very careful that there is no chance for the warm air to escape through cracks around the top of the hive. Whenever the cover to the brood-chamber is removed after cool weather has set in in the fall, a crack of greater or less extent is made, which the bees are unable to close until the warm weather of the next spring. When a weight is kept on the flat board cover, it is held down closely to the hive; lumps of propolis are flattened out as they soften, and the crevice closed, or reduced to the smallest dimensions, making it easy for the bees to close it tight. After warm weather has arrived this matter becomes unimportant, so that, unless a cover is inclined to warp or twist, weights are unnecessary; and during the working season they are laid aside, from hives that are to be frequently opened.

In practical honey production, hives need to be opened so seldom that the labor of removing and replacing these weights is but small compared with their advantages. If desired they can be used to keep a record of the condition of the hive. A brick, as used by S. W. Morrison, answers this purpose excellently, but is hardly heavy enough for a weight. There is a large paving-brick made here that is just the thing for both purposes, and I expect to use them hereafter.

Besides the record that may be kept by placing them in different positions on the hive, the brick may be painted on two or three of its sides, thus more than doubling the possible combinations. Where any record more extended or permanent is desired, I prefer a small piece of cardboard held to the hive by a single small tack, and written upon with a leadpencil.

**DEAD-AIR SPACES, AGAIN.**

I know that some claim as an advantage of air-spaces as opposed to packing, that they are more easily warmed up, thus allowing the bees to fly sooner and oftener. It is true, that they will let the heat of the sun in more readily, just as they will let the heat of the bees out more readily—in both cases a disadvantage. We do not want the bees to fly every time the sun shines for a few minutes. As a rule, we should rather discourage flying in the winter and early spring. Just enough flights to keep the bees in good health is much better than to have them tempted out on every appearance of sunshine, to wear themselves out or be chilled and lost. If the bees have been confined long, and you want them to make the most of warm weather that you are afraid might not warm up packed hives, remove the packing from the top, and let the sun shine directly on the hive.

Usually, though, this is unnecessary trouble, as bees in packed hives will fly whenever it is perfectly safe for them to do so. J. A. GREEN.  
Dayton, Ill., Apr. 8.

[Yes, we do have winds, but I do not remember of more than two or three in five years that have been sufficient in force to raise more than fifty covers, and these were replaced very soon after. The covers of our Dovetailed hives, where we use no enamel cloth, need neither stone nor clamps to hold them down. The bees will gum them so they will stick, and in opening them we are obliged to use the blade of a knife or screwdriver to loosen them. The covers that have been blown off for us have been those of chaff and Simplicity hives. If I found it necessary to have the cover held down by something, I believe I should prefer the light malleable Van Deusen clamp, made by Dr. Tinker. These exert considerable pressure, and save the labor of lifting when required to remove the cover. But, hold a minute! No Van Deusen clamps would hold down your corrugated iron covers, would they? And as Illinois is a prairie State, and the winds come with volume and force, I shall have to give up to you. Very likely I should use stones if I were in your location. There is no disputing the fact, that a flat flagging-stone or a paving-brick, aside from its office in holding the cover down, affords an excellent arrangement for keeping a record; and the idea of painting one or both sides different colors is good. But would these paving-bricks be heavy enough to hold the cover down—that is, would five or six pounds be sufficient? If so, I am with you.

In regard to air-spaces, I acknowledge that, theoretically, they ought not to be as good as packed spaces; but some facts are coming to light to show there is but very little practical difference in results. Still, one swallow does not make a summer. All I desire is, that the matter be agitated enough so that we shall know on which side is truth and safety, as well as convenience and minimum cost.] E. R. R.

[Permit me to say something right here, friend G. The Simplicity hive was planned with the idea that the bees should never have a chance to propolize the inside of the cover. They were to be kept entirely away from the cover joints by quilts or enamel sheets. You see we use our hives for queen-rearing. They are opened and the frames handled incessantly; therefore we want a cover that never sticks, and frames that can be picked up with one hand, without a bit of jar or sticking. Now, the boys have rather "sat down" on the Simplicity hive, and a good many have discarded the metal-cornered frames; yet there may be quite a few, especially among those who raise queens for sale, who want the old appliances invented for this special purpose by your friend A. I. R. See the following:]

**IN FAVOR OF THE METAL-CORNERED THICK-TOP FRAME.**

I have been following the brood-frame question with great interest, but have not dared to say any thing. I admit that I have never used the Hoffman or any closed or fixed frame, and some may say I am not able to advise for that reason. Perhaps not. But, be as it may, I have 2500 heavy-top metal-top cornered frames in use, and am making 3000 more of the same kind for this season's use. All are to be wired with full sheets of foundation. I winter in packed hives, and do not expect to haul my bees any. I want a frame made so that, when I take hold of one to move it, even with one hand, it will start every time without any pry-



ing or jarring of the hive. Any wood-cornered frame will not do this here, as they are fastened with propolis to stay; so I am one more on the side of metal corners and swinging (?) frames.

H. P. LANGDON.

East Constable, N. Y., Mar. 23.

## HEADS OF GRAIN

### FROM DIFFERENT FIELDS.

#### BLISTER-BEETLES ON BEES.

*Friend Root:*—The crumbled scrap of paper inclosed in this letter contains a bee which is nearly covered with lice, which are the most disagreeable-looking insects that we ever saw. They are about an eighth of an inch long, and similar in color to the wire-worm.

Viola, Idaho, April 7.

E. P. PALMER.

[We sent the above to Prof. Cook, who replies:]

As I state in the last edition of the Bee-keeper's Guide, where I illustrate blister-beetle parasites of bees, I have received such bee-enemies from California and New York; now they come from Viola, Idaho. These are the larvæ of our meloe, or blister beetles. The larvæ of the blister-beetles are strangely interesting in that they pass through several forms. The first form is long, flat, with a broad head and thorax, long legs, and two long stylets projecting from the end of the body. This is the stage in which they fasten to and feed on bees. I find that there were fourteen of these little pests attached to the bee sent by Mr. Palmer. I hope I found them all. There is a good figure of these larval parasites in my Manual. I should like Mr. Palmer to send me more infested bees, should he find any. I shall take pleasure in describing and naming any insects sent to me, and especially of insects working on bees.

Ag'l College, Mich., Apr. 18.

A. J. COOK.

#### BEES AT WORK ON PEAVINES.

Last August I had a pea-patch about half a mile from my bees—about an acre. The bees made a continuous buzz, at work on them from early morn till late in the evening, assisted by the wasps and yellow-jackets. At the same time, I had a lot of Japanese buckwheat (very fine) of about 1½ acres close to the bees, and there were always twice as many of my bees to the rod on an acre on the peas as on the buckwheat. I have noticed for years that bees do all their work on buckwheat in the morning. The bees, etc., were at work on the fruit-stem of the peavine about the time the peas were large enough to be gathered to eat; and in many cases every pea had been gathered for a good many days. They were confined to the end of the fruit-stalk, just where the peas were or had been pulled from. There were no lice nor any thing of the kind that could be seen with the naked eye. In August the peas and buckwheat were about all the bee forage there was.

Design, Va.

R. JEFF. JONES.

[Friend J., this only gives us another illustration of the fact that almost any plant may at times yield honey; and, furthermore, that, by some freak of nature, the plants may at times secrete nectar when they are not in bloom. I suppose the sweet substance you mention oozed from the stem or broken vines after the peas were picked. We have had some reports to the effect that wheat and other grains, when cut for fodder, at a particular time or stage of growth, and during some seasons, secrete a

large quantity of a sweet substance in the stubble. In such cases, probably the starchy matter from the young growing plant is converted into sugar.]

#### CAN BEES PUNCTURE GRAPES OR HULL WHEAT?

While perusing your valuable journal, I have been brought to believe that bees can not puncture fruit; but, under certain conditions of the weather, grapes will crack, and the bees will then be eager to save the wasting sweet. In a late issue I learn that they can hull and powder a bushel of wheat in their leisure moments. Further, friend Root, when high authority admits it may be true, or it is possible for them to do so, I must confess I do not feel safe in telling my neighbors that bees do not bite.

Belle Vernon, Pa., March 20. A. B. BAIRD.

[Friend B., I confess that I thought it a little strange that bees could eat wheat; but since then friend France has suggested that it was mice and not the bees.]

#### WHEN IT DOES AND WHEN IT DOES NOT PAY TO USE FULL SHEETS OF FOUNDATION IN THE SECTIONS.

In a rush of honey I find the larger pieces I use in the sections the better, as the bees can not then build comb nearly as fast as they gather honey, build their combs thin as possible and seal them as thin as wafers; but when honey comes in quite slowly they have a superabundance of wax, leave the foundation undrawn, in the shape of the renowned objectionable "fish-bone," build their combs without stint, and seal them much heavier. Where the season is very short, but the flow, while it lasts, heavy, fill the boxes with full sheets. Where the flow is moderate and the season long, a narrow starter will be found to be of fully as much value as the full sheets, and without the fish-bone.

W. W. CASE.

Baptistown, N. J., Apr. 1.

#### SUGAR A COMPARATIVELY RECENT INVENTION.

On p. 222, foot-notes to E. T. Flanagan's article, you say, "The Scriptures lay very much more stress upon milk and honey than on any other kind of sweet." Sugar, as an article of commerce, has been known but four or five hundred years, if I am rightly informed. Honey is supposed to be the most ancient sweet known to the human race.

J. L. HUBBARD.

Walpole, N. H., April 6.

[No doubt you are right, friend H.; but just think what progress we have made in these times of civilization (?)—sugar unknown 500 years ago, and now it is only 5 cts. a pound for the best granulated. By the way, friend H., are we to understand that the limited quantity of honey produced in olden times was really all the sweetening they had? And, by the way, is it not possible that, if we were reduced to something like the same conditions, we might live to a good old age, as they did in early Bible times? Who knows?]

#### THE FALLACY OF CHILLED BROOD DEVELOPING INTO FOUL BROOD.

One of the results of non-protection in the spring is chilled and dead brood, liable to end in foul brood. So says Allen Pringle, and so say a great many other writers on bees. Now, is it a fact that foul brood can be started in that way? I for one don't believe it. I have been a bee-keeper all my life, and am now 67. I always wintered outdoors, and have never seen a case of foul brood yet. I am quite sure that I have had hundreds of cases of chilled

and dead brood in all of these years. Sometimes a colony gets brood well started in the spring, and then deserts the hive or swarms out, leaving their brood to chill and die, and then the first warm day that comes, the other bees in the yard go in and clean out the honey, and suck those chilled and dead larvae as dry as chips.

Another colony dies early in spring from starvation, leaving brood to chill and die. The other bees overhant the combs in search of plunder, and no foul brood results. Now, there is a long list of cases in all those years of bee-keeping and outdoor wintering where there has been chilled brood, and never a case of foul brood has there been. How is it that I have escaped? Can any one prove that foul brood ever originated in any such way? I doubt it.

Platteville, Wis., Mar. 29.

E. FRANCE.

#### SUCCESS WITH THE DOOLITTLE ARTIFICIAL CELLS; A GOOD TESTIMONIAL FOR DOOLITTLE'S BOOK.

Mr. Root:—In GLEANINGS for March I notice, on page 162, you wish to know from those who have succeeded with Doolittle's artificial wax cells. I first tried the plan given in Chap. 6, that of making them queenless three days, then taking their brood away and giving them twelve artificial wax cells with royal jelly and small larva. In four days, returning to this hive, to my surprise, I found every cell accepted and nearly ready to seal. I next tried the plan over a queen-excluding honey-board, as soon as honey was coming in from white clover. The colony being strong, I took two frames from the lower and placed them in the upper story. I took those with small larva next day, placing a frame with artificial wax cells in between, and a division-board on each side. In this way I have had 80 per cent of cells accepted. If we crowd the colony too much we shall not get as many completed. In this locality, about Aug. 1, bees are inactive, and then we must again feed to get them finished. Doolittle's book is worth to me many times its cost. I have not failed with any of the plans tried, given in his book.

PETER BROWER.

New Paris, Ind., Mar. 8.

#### HOW TO SAVE BASSWOOD SEEDS.

The following comes from one of our large nurserymen, who deals largely in basswood-trees raised from seedlings. It comes in answer to an inquiry of ours:

Basswood seed should be picked from the tree just as the leaves are falling, or picked from the ground as it falls, and should be dried just enough to take the moisture from the outside of the shell, but not to dry the germ of the seed any; then pack them in sand that is a little moist, not wet, and put in the cellar. Or it would be better if it were put in plenty of sand, and wet, and put outside to allow it to freeze, and then plant in the spring.

Evergreen, Wis., March 12.

GEO. PINNEY.

#### THE MOST IMPORTANT THING IN THE WORLD.

Friend Root:—I trust you will excuse me for not answering your question sooner. My mind has been so filled with a subject of so great importance as to nearly drive all else out. There has been a grand revival carried on in and around Fremont, and about 350 souls have been redeemed, myself among the number.

ROBERT E. ASHCRAFT.

Fremont, Mich., March 18.

[May the Lord be praised, friend A., especially for the latter sentence. We can put up with almost any sort of omission and neglect when it is explained by such a state of affairs as you mention.]

#### NO EXCLUDERS NEEDED FOR COMB HONEY.

I did not use any zinc honey-boards, nor honey-boards of any description, the past season, and there was not one section in 500 that contained brood or even pollen, so all contrivances of that kind are worthless for me.

Deer Park, Mo., Mar. 10. E. C. L. LARCH.

[Your experience is in just the line I have been trying to teach. With the 8-frame L. hive, queen-excluding honey-boards are entirely unnecessary in the production of comb honey. If unnecessary, they are a useless expense and labor. We make immense quantities of perforated metal, but I should be sorry to see any one pay out a lot of money when comb honey is the object.]

E. R.

#### PROSPECTS GOOD FOR CALIFORNIA.

Bees wintered very well in the mountains. They gathered considerable honey in December, and some in January. Sage is beginning to bloom. I think extracting will commence about the 20th or 25th of April. There has been plenty of rain so far to give fine prospects; and with one or two more spring rains we can expect a good crop.

J. G. GILSTRAP.

Last, Fresno Co., Cal., March 29.

#### RUBBER GLOVES WORSE THAN NOTHING FOR BEES.

I bought a pair some seven years ago of A. I. Root, and I did not have to use them very long to learn to abhor the very name and sight of them. They sweat the hand, are clumsy, and have to be fairly torn off, the hand looking as though it had been parboiled. My bees stung right through them, so there was but little protection from them against injury from bees, and a good deal of discomfort from their use. I now use a buck glove with a long cloth wrist, made to come up over my coat-sleeve, and held by elastic bands.

R. E. TIMONEY.

Smyrna, Maine, March 25.

#### SILVERHULL VS. JAPANESE BUCKWHEAT.

I see one of the friends advertising silverhull buckwheat as being superior to Japanese. It will not do so well in this part of West Virginia. In 1889 I got half a bushel from you, yielding 39 bushels on one acre and 15 rods. Last year I sowed  $1\frac{1}{2}$  bushels on 3 acres and 74 rods, yielding 139 bushels, machine measure. Silverhull never yielded over 15 bushels per acre for me.

J. L. MCKENZIE.

Hovessville, W. Va., Mar. 20.

#### THE LIGHT WINTERING CASE.

The two swarms done up in paper and oil cloth (see p. 280) are just booming. I believe I have just found out how to winter bees successfully. I vote for the light wintering case.

RAMBLER.

#### BEES ALL DEAD.

The bees in this section of country are nearly all dead, and people are waiting to see whether they have any bees left before buying hives.

DUDLEY WALKER.

North Chatham, N. Y., April 3.

Bees here have wintered splendidly so far; glad to see that GLEANINGS is always improving.

ANDREW BUCHAN.

Loanhead, Mid-Lothian, Scotland, Feb. 17.

I enjoy Rambler's letters very much, and my wife takes on so about him I am getting uneasy. She is thinking of going to California.

LITTLE EASY.

Fayette Corner, Tenn., April 6.



## MORE THAN HALF THE BEES DEAD.

More than half of all the bees in this part of the country have died through the winter, but they were all in box hives. J. A. SHONE.

Salem, Miss., March 30, 1891.

## BEES IN THE CELLAR WINTERED BEST.

Our bees wintered much better in the cellar than those out of doors; but both are very short of stores. I shall have to feed more largely this spring than we have ever done; but at this date we find but two dead; but several are very weak, and will probably die if not helped or united with some other colonies.

Mrs. L. C. ANTELL.

Roseville, Ill., April 13.

## THE WINTERING OF E. FRANCE'S BEES, AND PROSPECTS FOR THE SEASON.

We have just finished looking over the bees, and find them in good condition. White clover is looking well. We have spoken for 50,000 lbs. of honey if the season is good. But I am afraid that we have too many bees for our pasture. First pollen April 12. We have drones hatched in several hives already, only eight days since the first pollen. Big hives do it.

Platteville, Wis., April 18. E. FRANCE.

## THE OUTLOOK IN CALIFORNIA.

The season here is very late this year. It has been cold and backward. But the "filleree" is out in all its glory, and the bees are booming on it. The black sage is shooting up its long slender stems that bear the buds and blossoms, and will soon throw out its white-purple banner to the breeze, and the bees will have a picnic. We have had a bountiful supply of rain up to the present time, but we'll need another good one early in April to make a good season. If it comes in plenty, you will hear from here in the way of a honey crop. If it does not come, the output will be about the same as last year. It is a singular fact, that, in a half-crop year, we get a larger proportion of white honey. The white honey comes first, while the ground is still damp. The drouth dries up many of the flowers that yield the dark honey.

Sumac, Cal., March 27. J. F. ISRAEL.

## OUR QUESTION-BOX,

With Replies from our best Authorities on Bees.

QUESTION 184. *I have single-walled hives, and winter in cellar. Will it pay to give any extra protection after the bees are taken out in the spring? If so, what would you use?*

No.

Illinois. N. W.

DADANT & SON.

I don't think it is necessary.

Louisiana. E. C.

P. L. VIALON.

I think the extra protection would be a good thing.

Wisconsin. S. W.

E. FRANCE.

Yes, I think it would if you live in a rather cool climate like our own.

Michigan. S. W.

JAMES HEDDON.

I prefer to keep them in the cellar quite late. Nothing is lost by so doing, and much gained.

Illinois. N. W. C.

Mrs. L. HARRISON.

My bees require no better protection in winter or summer than single-walled hives.

Ohio. S. W.

C. F. MUTH.

Yes, an outer case, if taken out of cellar early; in fact, an outer case is beneficial throughout the season.

Vermont. N. W.

A. E. MANUM.

With our hives we see that the bees are covered up warm, and then let them go. I doubt whether packing would pay.

New York. C.

P. H. ELWOOD.

It will probably pay to have cheap rough boxes to set them in, and fill between them and the hives with chaff.

California. S.

R. WILKIN.

I've had no experience, but I suspect it might pay to have an outside shell, such as the 28 friend Root is trying this winter.

Illinois. N.

C. C. MILLER.

1. Yes, it will pay well. 2. A box eight inches larger each way than the hive, packed with planer shavings, sawdust, leaves, or chaff, and having a good tight roof.

Illinois. N. C.

J. A. GREEN.

1. If colonies are strong, and have abundance of stores, they will likely remain quiet, and need no protection. 2. Any treatment that keeps the bees quiet is *good protection*.

Ohio. N. W.

H. R. BOARDMAN.

I think it will, but can not say from experience. Contract to six frames, and use two chaff dummies inside. My preference would be for light one-story chaff hives, used both in the cellar and out.

Ohio. N. W.

E. E. HASTY.

I believe it pays *well*. I use a cheap, rough, 1/2-inch board outer case, and pack with chaff or cut straw, or an equivalent. I have done this for several years with a part of my colonies, and shall try to fix all so the coming spring.

Ohio. N. W.

A. B. MASON.

I have proved by actual test for the past two years that it does pay well. I use a simple case with cover that I use for a shade-board later in the season. I nail but slightly, so as to separate the sides as I pack them away.

Michigan. C.

A. J. COOK.

I use chaff hives, and winter in the cellar, and want no single-walled hives for the production of honey. This I say after using single-walled hives for 20 years, and single-walled hives and chaff hives side by side for 10 years of that time.

New York. C.

G. M. DOOLITTLE.

If bees are held in the cellar until soft maple is in blossom, we find it unnecessary to give cumbersome protection. But if I had to use something I would draw over the hive a case made of paper and oil cloth. I am even wintering bees outdoors with such a hood.

New York. E.

RAMBLER.

It pays to protect from prevailing winds, either singly or the whole yard. It is best to give them the full benefit of the sunshine through the spring months. Swarms that have wintered well will be all right if so treated; if not all right, no kind of tinkering will prove satisfactory.

Wisconsin. S. W.

S. I. FREEBORN.

[Well, now, friends, after the above testimony we have in favor of cellar protection, after they are put out of the cellar why not, at least in moderate climates, let the protection take the place of the cellar, and then there is nothing

to be said or done to the bees from November till April?]

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### SPECIAL DEPARTMENT FOR A. I. ROOT, AND HIS FRIENDS WHO LOVE TO RAISE CROPS.

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#### SPINACH IN APRIL.

Everybody has been calling for spinach. A few days ago our wagon folks wanted to know whether they could not send to Cleveland and get some. I told them that it was away up, and that we could not even think of it. A little later they wanted to know what I meant by "away up."

"Why," said I, "it will cost at least 10 cents a pound, and no one in Medina, hardly, would give that, especially as the freight must be added to the 10 cents."

"Well, Mr. Root, if you will get us a barrel I think we can show you that Medina folks will pay 15 cents."

"All right; I will risk the price of a barrel, to try the experiment. But you will see that we shall have it all to use up in the lunch-room."

Now, how do you suppose it turned out? Why, they sold the barrel right off in *one day*; and as the people were not satisfied we pulled a lot of small beets out of the greenhouse, that were crowding, and they took them all off at 15 cents a pound. As we did not have our usual supply of lettuce, in consequence of moving our greenhouses last fall, we have been sending to Eugene Davis, the originator of the Grand Rapids lettuce, and it has been going off barrel after barrel at 25 cents per lb. retail. Pie-plant is still bringing 10 cents per lb.; asparagus 40 cents, and other things in proportion. Why, it is astounding. I am sure spinach could be raised at a profit at 3 cents per lb. With us it usually winters in the open air without any trouble until some time in February. The heavy freezes in February and March, without snow, use it up. We have tried mulching, but somehow this does not work, or we do not have the right kind of mulching. I see evergreen boughs have been recommended. I presume they would do it to a dot where one has them. It is a mystery to me why somebody does not make a big thing on spinach. Last fall we put in a great lot of it, but it happened to be near the barn, and the poultry took a great fancy to it. I supposed they would, but I thought I had planted enough for the poultry and our market-garden also. But I tell you, a flock of Brahmas can get away with an astonishing amount of spinach. I still believe it would be profitable to plant spinach for poultry. If the ground is rich and in good order, it can be put in after potatoes, sweet corn, or almost any other crop. We succeed best by sowing it early enough to get it just as large as it can be without running up to seed before frost. In that condition it will stand like kale all through the winter; and so far we have succeeded better without mulching than we have with. The mulch seems to make it rot. Perhaps the way to make a real sure thing of it is to put it in a cool greenhouse, as described in the new book, "How to Make the Garden Pay." Grand Rapids lettuce may be grown in the same way. Either of these plants may be kept all through the winter in our locality, without heat, provided the glass can be shut up tight, and the beds be a little below the surface of the ground. A windbreak of buildings or evergreens, so arranged as not to interfere with the sun, will be a great help.

#### OUR HOT-BEDS HEATED BY STEAM.

I should be glad to report that they have done

as well during April as they did through March. About the middle of March we left on the exhaust steam until they became too hot, and many of the plants were injured; and since that they have got sort of contrary. In fact, they have not done nearly as well as the greenhouse, where we could go inside and regulate the temperature; and I am now coming strongly to the conclusion that I want all my glass structures so I can go inside, under the glass, and regulate the temperature. During the past month every thing has grown so beautifully in the greenhouse, that I am somewhat losing my faith in the advantage of stripping the sash clear off; at least, our recent experience indicates that there is no particular need of removing the sash until, say, the first of April. Every thing in the greenhouse is doing just beautifully. Mr. Weed suggests that it is largely due to the fact that the *soil* in the beds in the greenhouse is old and thoroughly rotted compost. Every thing we put into it just climbs; while all that in our hot-beds, outside, was made up in the fall, winter, and spring. The manure and most of the materials are comparatively new.

#### LIMA BEANS.

It begins to be time to begin to think about lima beans. Shall we give up the pole limas, or will it still pay to provide poles? In our last issue I talked about growing *tomatoes* on poles; and I rather suspect it will pay us to have poles for lima beans. The bush limas on our soil—that is, Burpee's and the Kumerle, have, on our rich soil, made such a mass of vines that we have been greatly troubled with rot and mildew, and in getting the beans to ripen sufficiently for seed. A good friend of mine has been talking about the Challenger, and even sent me a pint by mail, so as to be sure I would give them a trial. Here is what he says about them:

My family are all great lovers of lima beans, and I yearly put in 200 poles for our own use, selling the surplus in the city of Newark (pop. 185,000, two miles away), with whatever other farm products we may have. For the past two years I have grown Challenger beans, and they have sold much higher than Pratt's or Dreer's, which I have heretofore had. I have sold over \$40.00 worth each year, *besides what we used ourselves*, and should have sold much more but for my mistakes in growing them. I planted three to each pole, four feet apart, but this was too close; there was such a wealth of vines that bushels of beans mildewed and never ripened. I shall grow double the number of poles this year, placing the poles five feet apart, with two vines to a pole. This bean throws out more runners than any other that I know of, and requires far more careful handling, as the vines are exceedingly tender. My beans were sold at one price—*thirty cents per half-peck, unshelled*, while an abundance of other limas were selling at 15 to 20 cts. for the same quantity. I never had nearly enough of mine.

Lyons Farms, N. J., Apr. 21. WM. GRUMMAN.

You will notice, also, that he touches on this matter of having them rot and mildew. That has been one of our troubles, and I believe he is right in recommending poles to be not less than five feet apart, and not more than two vines to a pole. By the way, the lima beans can be transplanted without very much trouble, if you take a good lump of dirt along with the bean. After we have gone to the trouble of putting up poles, we can not afford to have any poles without beans on them; neither can we afford, for the reasons above given, to have more than two good plants to a pole.

#### STRAWBERRIES.

We never before had our strawberries looking so well at this season. Just as soon as the weeds showed themselves a careful man went all over them, and took out every weed at the



same time that he removed the mulch. About half of ours were mulched and half were not. During such a spring as the past one, the mulched ones were ahead. Very likely, however, the unmulched will be a little earlier. Before *fruiting*, however, we *must* have some sort of mulching. I never want any more gritty and sandy berries after seeing friend Terry's. Cut straw is rather expensive with us, but we do not know of any thing else that will answer the purpose any cheaper. I am afraid that, if put on just before fruiting, the wind might blow it away. Very likely, however, if you get it on just before a good rain it will stay all right.

#### ANOTHER DEVICE FOR BERRY-PICKERS, ETC.

Seeing an illustration of your blackberry-picking machine, I thought of a simple device that I used. To-day I mail you a sample (just as it was made in a hurry), which has been used. The children went crazy for them, as they could use both hands when using this little machine, which any one can make in ten minutes. They are intended for holding a one-quart wooden berry-box, as you will see. The little cleat on the bottom, with a beveled edge inward, holds the bottom of the box in place. The button holds the top. The one I sent was for a child, as I notice the strap to go around the neck (an old suspender) is short for a person of medium height. Of course, I should prefer your device, as the berries are in a safer condition with the covered box.

I should like to ask how the perforated metal used over the entrances insures certainty of fertilization (see p. 168). 35th Ramble.

Manistee, Mich., March 17. H. W. HARMER.

[Thanks, friend H., for your suggestion. I will explain to our readers that it is simply a little board, perhaps 10 inches wide, a foot long, and  $\frac{3}{8}$  thick. A cleat is nailed on so as to catch on the bottom of the basket. Then a button at the right height turns so as to secure the top. Put on a strap or piece of tape, and hang it over the neck, and the berry-picker is rigged. To prevent it from swinging about so as to spill the berries, I would suggest, also, a belt to go around the waist.]

## OUR OWN APIARY.

CONDUCTED BY ERNEST R. ROOT.

We have had scarcely any losses since the last report. Very fortunately the weather turned off warm, soft maples came out, and the bees have been having several gala days. Brood-rearing is progressing unusually well.

#### HOW THE COLONIES IN THE CELLAR WINTERED.

Generally speaking, our bees in the cellar did very much better than those outdoors last winter; and the consumption of stores per colony was, as nearly as we could estimate, only about half as much outdoors. It is more noticeable this spring than last, although even then there was quite a difference, showing a lesser consumption of stores in the cellar.

We carried out nearly all the bees, until I began to think there was not a colony lost; but of the last few, we found three that were dead. On the cover of one of the three I had marked last fall, with a leadpencil, "Very weak; will probably die." As nearly as I can recollect now, this had only a handful of bees. I presume Mr. Alley would have thrown them out on the grass. But I thought I would see how they would do. The two others that died, we know were not very strong when put into the

cellar; and the inside of the combs was spotted a little with dysentery.

#### THE ADVANTAGE OF FULL BOTTOM VENTILATION IN THE CELLAR.

As usual for experimental purposes, I had left in the cellar some half a dozen hives with fast bottoms. The combs of these (as was also the case last year) were wet and moldy, and the bees looked a little "poddy," as if they were slightly diseased. On the contrary, the hives that had been tiered up *a la* Boardman, *without bottom-boards*, were comparatively dry inside, and the bees were healthy and strong.

I confess that, on account of the lesser consumption of stores, in view of the knowledge thus far attained in cellar wintering, I am inclining more and more to the indoor plan. The saving of expense of chaff hives compared with winter cases over single-walled hives, and the large saving in the consumption of stores, are two important factors that rather influence me toward the indoor plan; but nevertheless I suppose that we shall do, year after year, as Doolittle does—not put all our eggs into one basket, but winter both ways.

McFARLAND'S HIVE-CARRIER—SEE PAGE 327. LAST ISSUE.

Mrs. Root, Jr., objected very strenuously to our having the cellar-wintered colonies put back of our house; so this spring, when we carried the bees out of the cellar, we were obliged to lug them a couple of hundred yards, to our regular home apiary. Now, it would not do to have *two* men, with a pair of hive-carriers, carry *one* hive at a time. So I told Mr. Spafford we would manage some way to have the order reversed; namely, one man to carry two hives. We very soon constructed one of McFarland's hive-carriers, as illustrated on page 327. After it was all done I began to feel as if it were a lot of toggery, and would cause more vexation in handling than it was really worth. I was agreeably surprised to find, upon trial, that it worked just as Mr. M. said it would; and not only that, we could load up in the bee-cellar, pass through two doorways, through the vegetable-cellar, and finally up the cellar-steps. In going through the doorway we walked a little sidewise; and in passing up the cellar-steps all we had to do was simply to tilt one side down, and the other, as a matter of course, would be brought up. Mr. Spafford carried over most of the colonies, and I tried a couple of loads to satisfy myself that the thing was all O. K. I was greatly surprised at the load a man can lift, and carry in this way with comfort. I took up a couple of average colonies, and carried them about 200 yards, over to the factory scales, zigzagging around among boxes and through doorways, and then weighed myself with the burden, with no inconvenience, and then went safely to the yard. By subtracting my own weight I found that I carried 80 lbs.; and I know I could have sustained, without any inconvenience, an even hundred. Perhaps I should say that the entrances, while carrying the hives, were closed. This made every thing so secure that the carrier could jolt around a good deal without being pestered by angry bees.

I should not omit to say, in the fall our hives were carried in by their bottom-boards. The hives were then piled up without bottom-boards, *a la* Boardman, the latter being stacked up by themselves in one corner of the cellar. In carrying the hives out, we put the bottom-board down, set the hive on that, and closed the entrances. We put another one right by the side of it, then, stooping down with the hive-carrier, picked them up and carried them to their location.

## MYSELF AND MY NEIGHBORS.

Thou God seest me.—GEN. 16:13.

There seems to be a great dividing line among humanity; and the little text I have chosen seems to indicate where the dividing line is. A part of humanity believe that God sees when nobody else does, and behave themselves accordingly. The other part either deny the existence of any overseeing spirit at all, or they insist that God does not care, or does not bother himself to look after events and lives of each separate individual. One class think if they can hide their deeds from the eyes of men, nothing further is necessary. The other class live in the fear of God; and the Bible says, "The fear of the Lord is the beginning of wisdom." Some may urge and argue, that it is the duty of every one to do right because it is right. I should be very glad indeed to have them do this if they would. But, alas! such an incentive to right doing seems to lack strength and energy with the average individual. I was brought up, as you know, to attend church and Sunday-school. I learned Bible texts, and verses of Scripture by the hundred, without having any very distinct idea of what was implied in them. Nevertheless, I am heartily in favor of having children learn Bible texts. I will tell you presently why.

When I was about eighteen years old I taught school in a region then called "Black Swamp." My schoolhouse was a mile north of the town of Elmore, Ottawa Co., O. At that time I had rather broken away from the influences of Sunday-schools and Bible teachings, and was having my "liberty" as I called it. At eighteen I thought I was capable of taking care of myself without any such hindrances as Christianity imposes. One little sketch or glimpse of my life at this time comes vividly to my mind this morning. My principal companion and associate was a man perhaps twice my age. He was one of the class who pride themselves on their freedom of action and freedom of thought. One evening he announced his determination of going "up town," and I accordingly decided to go along. The first place we visited was a little grocery where they sold beer. The man was new in the business, and his premises were so narrow and small that he kept his beer in the cellar, and went down a little trapdoor behind the counter to draw it for his customers. My companion called for two glasses of beer; and while the proprietor was down through the trapdoor my friend jumped lightly and seated himself on the top of the counter. Then he leaned over to the shelves back of the counter, took a couple of nice oranges from a basket, pushed one into my pocket, and put the other into his own. When the storekeeper emerged with his two glasses of beer we were standing by the counter in our former attitude, looking honest and innocent, as a matter of course. My friend paid for the beer; and when we got out of doors we both had a good laugh at our own sharpness, and probably at the same time at the dullness and stupidity of a storekeeper who would go away out of sight and leave customers such a chance to help themselves. Now, I can not remember that any compunctions of conscience troubled me at all at that time. I am afraid, too, that many young men in their teens would have thought as I did, that it was a sharp trick, and not of much account any way. Had I reached over the counter myself and taken the oranges, it would have made a difference. But, you see I did not touch them at all. I had nothing to do with it. I could not very well object to his putting the orange

into my pocket, because the proprietor came up so quickly that it would have got my friend into trouble. I presume likely I had heard it said, that "the partaker is as bad as the thief;" but I did not remember it then. There is one thing very certain: At that period of my life I did not think of the all-seeing Eye at all. I remained in the town of Elmore pretty nearly a year; but as I look back I can not recollect of having attended church or Sunday-school *one single time*. Although I taught school, the Bible was never my counselor or friend in need. I never read a word from it to my pupils, and I can not remember that I ever used a Scripture text. A schoolteacher nowadays who is in the habit of taking his beer would probably lose his place very soon. I had *learned* to drink beer with anybody who asked me; but I presume I kept the fact from the knowledge of my good mother. The pastors of the different churches in Elmore may have approached me on the subject of religion, but I can not now remember that they did. Somebody may have invited me to go to Sunday-school; but after a lapse of more than thirty years I can not recall that the matter of Sunday-schools ever came to my mind. I was like a thousand other boys who do not seem to think they have any thing to do but to amuse themselves, and perhaps do what they can to get an education. I remember that, during that winter, I sent for a small microscope, and became quite full of enthusiasm over the wonders it revealed. I read a good deal in the popular magazines, and got books from the various stores. But, so far as I can remember, the thought that I owed respect, reverence, and recognition to the great God above, never entered my mind. As I recall this period of my life, so far as I can after the lapse of years, I begin to have more charity for the boys and young men around me than I have had before. At some of my boarding-places (for I boarded around) they read the Bible mornings, and had family prayers; but I can not now recall a single thing that I heard from those Bible-readings, nor can I remember the words of the morning prayer, except in a *general* way. It was not customary in those days to make *practical applications* in Bible-readings and prayers as it is now. The Young Men's Christian Association, which sprang into existence about that time, or a little before, was entirely unknown to me. My Sundays were mostly passed in rambling about the woods and fields, looking up springs in the hill-sides; and I remember of carrying lemons and sugar along, and making lemonade under the shady trees. The first thing Sunday morning was to study up how we could have the most fun. A great part of the Sabbath was, however, spent in reading magazines and newspapers. After a long ramble one Sunday with the friend I have spoken of, as we neared home we sat on the top of a fence to rest. I made a remark something like this:

"I do not know just how it comes; but to tell the truth, L., the *older* I grow, the more tasteless, insipid, and unsatisfying my life becomes. In fact, I am getting so lately that I don't enjoy things at all as I did when I was twelve or fifteen. I wonder how long this state of affairs is to continue."

Now, boys, take note of the reply; and bear in mind that it came from a man who prided himself on being a free-thinker, and being entirely untrammelled by superstition or by religion. As nearly as I remember, his words were something like these; and what sort of words are they, dear friends, for a boy eighteen years of age! Said he:

"Well, Amos, it is a kind of sad fact; but facts are often sad things. My own experience



has been just like yours; and you will find that every year that is added to your life makes it still more and more so. The world has not very much to offer. It is empty and hollow, and unsatisfying. The best thing to do is to get all the fun out of it you can while you are young; and as you get older, take it as the rest of us do."

This man was sarcastic and bitter whenever the subject of religion was mentioned. He even went so far as to sneer at virtue, and advised (although he did not say so in so many words) that we should look at the other sex as simply something that the world has to offer as a means of amusing ourselves, and having fun, and that it was their business to take care of themselves. If they were not able to do that, or were innocent and unsuspecting, it was *their* affair and not ours. His words and his companionship were poison to my young mind. But don't let me put the blame *all* on him. I was old enough, and had had sufficient Christian training, to have either rebuked him or to have withdrawn entirely from his company. He was, however, a skillful mechanic, and quite a leading spirit among the people of Black Swamp at that time. He may have been converted, like myself, since then, from the error of his ways; but if not, may God hear my prayer for him to-day.

Let us now go back to the oranges. The storekeeper I have mentioned was not only poor financially, but he was poor in health. His thin, sallow face made it known to all. His feeble looks come up to me now as I rebuke myself for my thoughtless dishonesty. May God forgive that foolish act, and the foolish years of my life at that period. The two oranges my companion took were worth, perhaps, a dime. That sum at compound interest would, after the lapse of thirty years, have amounted to about a dollar. Our poor friend has, in all probability, gone to his grave years ago. If so, he may have some relatives or descendants; and if such is the case I shall feel easier to hand this money over to them to atone, so far as I can, for that thoughtless piece of dishonesty. His name was Eoff; and as GLEANINGS goes even now to the town of Elmore, perhaps somebody whose eyes rest on this may be able to identify the poor feeble storekeeper of thirty-three years ago. Now to our text:

I do not know just what I believed at that time in my life: but the little story I have told indicates very clearly that I had no abiding faith in the all-seeing Eye. In former Home Papers I have mentioned some other events of that winter; and it is not strange that the seeds that were sown in my heart at that time bore a crop of evil fruit, even during a term of a four months' school. The fear of God was not in my heart at all. Very likely the effect of the teaching of Christian parents was somewhat of a restraint upon me; but I was a fair sample of a young man of perhaps fair ability, who has none of the fear of God in his heart, and who does not believe in the teachings of an all-seeing Eye.

A few days ago, Mr. C. N. Pond, a man prominent in Sunday-school work throughout our own and other States, was with us for a few days. He was invited to take charge of our noon service; and in speaking to our work-people there assembled he said something like this:

"My good friends, many of you are young, and doubtless have bright anticipations and high aspirations for the lives that lie before you. Now, although there has been considerable said about the enthusiasm of youth, I want to say to you that all of your bright visions

may be realized—yes, even more than any of you, perhaps, have thought of in your imaginations. I am now toward fifty years old, and I, when young, had great expectations of the outcome of the years before me. They have all been realized, and more too."

At this point I began to feel exceedingly anxious, and perhaps a little uneasy. I wanted friend Pond to make haste to add the one important condition for realizing the bright anticipations of youth. He very soon put it in, and with emphasis enough to satisfy even myself. It was something like this:

"I say, these bright visions may all be realized; but I wish to add, that it is only on condition that you start out with Christ Jesus by your side, that you make him first and foremost, over all and above all—that your constant end and aim in life be to please *him* and not *self*. Do this, and life has more in store for you than any of you can think."

Now, I know brother Pond intimately. I have known him since he was a light-haired boy, and perhaps the butt and jest of some because they thought themselves ever so much smarter and *sharper* than he was. They laughed at him because he was honest and true; and it was whispered, too, that this light-haired, unsophisticated youth, had in mind to study for the ministry. He was not at that time what many of the world's people would call *sharp*. He never could, under any order of things, have been a party to stealing oranges, as I was. He worked on a farm in the summer time, and went to school winters; and when I first met him at an evening party the young ladies brought him in as the "hired man." He chose Christ Jesus as his helper and friend in early youth; and he has been laboring to serve him all these years. *No wonder* that each succeeding year grows brighter and brighter, and that every decade sees him a happier and a more joyous man than he ever was before. He and his wife were with us over night. At the breakfast-table in the morning he was, as usual, beaming and full of smiles and pleasant words for every member of the family; and his mood was so infectious that we all got happy by looking at him and hearing him talk. Finally he turned to his wife and said:

"There, wife, didn't I tell you what a good place I was going to bring you to?" And then he laughed at me as I commenced a remonstrance. But I had a point to make, and I was determined to make it.

"Bro. Pond, look here. I want to correct you, and straighten you up. It is *not* the place nor the surroundings that make you so happy; but the secret of it all is, that you are so *easily pleased*; and I appeal to your good wife for a second to my point. Is it not true, Mrs. P., and is it not one of the secrets of his happy and joyous life, that he is so easily pleased with every thing and everybody?"

She responded at once. "Yes, Mr. Root, it is a good deal as you say. He sees that which is good and bright and beautiful almost everywhere, and somehow he is pleased and happy when many people would only be finding fault, and complaining."

And now, dear friends, here is one of the great points of my talk to-day. Jesus "*pleased not himself*;" and brother Pond has been so long the intimate friend of our Lord and Master that he has caught the spirit from him, and makes people happy and pleasant and *good* wherever he comes in contact with them. And it *has* seemed as if the Master seemed to delight in giving him "pleasant surprises," such as I told you of in my last. Only last year he and his wife together took what he calls a "honeymoon," not only all over the United States, in-

cluding California and the Pacific Coast, but even to the Sandwich Islands. When I first saw him after he returned I asked for an explanation. How could a minister of the gospel, who is comparatively poor in this world's goods, spend a whole year in a kind of travel that costs tremendously to most of us? Well, it all came about very simply. By chance or accident he has some very warm friends, and some who are quite well off. I say, "chance or accident." Is it really so? Well, these friends clubbed together and actually *insisted* that he and his wife should take this trip; and they regarded it as a privilege to pay all their expenses. Our good friend accepted the situation, not only as God's call, but went right along smiling and beaming right and left, making everybody laugh, and, if I am not mistaken, giving, by his air and manner and words and exhortation, almost without their knowing it, an invitation to lead pure, better, and more godly lives than they had been doing. A great part of his work in life is in talking to Sunday-schools and Sunday-school teachers. In fact, his business is to build up Sunday-schools, and to strengthen in the faith of Christ Jesus those already built; and in the faith, too, of that all-seeing Eye which is "in every place, beholding the evil and the good."

Let me now go back a little to my friend of former years. It gives me pain to speak ill of anybody, but I wish to give you *one glimpse* of the outcome of that man who said that every year that passed over his head made life more insipid, more dull, and more unsatisfying. Away back more than thirty years ago he let a bill run up in favor of a woman who did his washing. He put her off from time to time until he owed her between twenty and thirty dollars. She found out, years after, that he had just located in the vicinity of Medina, and asked me to go with her, as she was needy, to see whether he would not give her something on that old bill for washing that had been for years outlawed. We visited his home. He admitted the justice of her claim, but said that he was unable to pay a copper of it; and the evident marks of poverty all around him corroborated it. He said every thing had been against him; and, my friends, let me tell you that every thing is *almost sure* to work continually against him who scouts the idea that an all-seeing Eye looks down and watches every deliberate wicked thought of our hearts; and who proposes to please *only himself*, no matter who suffers by it. We have a plain Bible promise, that "all things work together for good to them that love God;" and you will also find that the contrary is true.

## TOBACCO COLUMN.

"AND WHEN THOU ART CONVERTED, STRENGTHEN THY BRETHREN."

The above was the subject for our prayer-meeting last Sunday evening. A good brother, who is well along in years, who has only lately come out fully for Christ, gave an illustration of the way in which comparing experiences often helps (strengthens) those (the brethren) who are battling against temptation. An old friend of his came into his store. Both had given up the use of tobacco, and they were talking the matter over, and this friend gave this astounding bit of experience: He had used tobacco all his life, and the habit increased on him (as it usually does) until he was buying something like a pound a week. Finally he began to have spells of blindness. They would

come on him out in the field, so as to make it difficult for him to see his way home. Doctors were consulted, but they could not tell what the matter was. O ye doctors! why are *ye* so blind—at least a great part of you, any way? The trouble kept growing worse and worse, and his family and friends were lamenting the sad fact that he would probably soon be totally blind. Finally it occurred to him that tobacco *might* have something to do with it, and so he left it off for just one day, and was not blind at all. Then he chewed again for just one day, and his blindness began to come back. Then he tested the matter thoroughly, and in a very little time it became plain that the blind spells came from the use of tobacco and nothing else; therefore, like a prudent and sensible man, he gave up the use of the weed. The speaker said this bit of experience did him a great deal of good, because it was so nearly like his own, only he never used it until it began to make him blind. Now, then, you friends of the medical fraternity, whenever you have a patient afflicted with some disease which you can not understand, please think of it, will you? and just *ask* if he is using tobacco.

I quit the use of tobacco nine years ago, and thank the Lord I have never used it since.

Tehama, Kan., Feb. 2.

L. N. COOPER.

My son, who has been a reader of GLEANINGS for some time, came to the conclusion to quit the use of tobacco, which he has been using to excess. If you will send me a smoker for him I will agree to pay you if he begins the use of tobacco again.

J. B. WHITON.

Ithaca, Mich., Jan. 20.

As Mr. R. J. McNeil has been induced by me and the Tobacco Column in GLEANINGS to quit the use of tobacco in any form, you will please send him a smoker. If he uses tobacco again I will pay you for the smoker. He is our school-teacher, and also a Baptist preacher.

Baird, Tex., March 4.

J. M. MATTHEWS.

### STILL FAITHFUL.

Somebody else would like to have GLEANINGS a little oftener, as well as wider and thicker; but if Home talks and Straws don't fail, GLEANINGS will be O. K. I am still faithful to my pledge in regard to not using tobacco. One year ago last January I quit.

Nettleton, Ark., Apr. 15.

I wish to say that I have been a user of tobacco for about 30 years; and through the influence of GLEANINGS I have quit its use. I have not touched it for six months, and do not intend to. I do not want any pay for quitting. I consider I am more than paid already. I hope you may continue to extend your influence for good. Use this testimony if it will be of any use to you.

DANIEL WRIGHT.

Violet, Ont., March 7.

Very nearly a year ago I left off the use of tobacco, and don't think I should have ever touched it again had I not gone into the bee-business. Two months ago I bought six colonies of bees, as a starter; and when I went to look through them I noticed my smoker was a very poor one, and almost worn out; but I thought I could make it do for the present. But the second colony I went into, it gave out altogether, and the bees seemed to know it, for they stung me dreadfully till I called to a friend near by to let me have his pipe; and with the smoke I soon quieted them down. Now; if you send me a smoker I will not smoke again.

A. B. WILKINSON.

Hawks Park, Fla., March 23.





Behold, the eye of the Lord is upon them that fear him, upon them that hope in his mercy.—Ps. 33: 18.

We observe that the markets are almost bare of choice comb honey of last year. Some say it was never so scarce before. New honey will begin to come in soon now.

We have had a beautiful spring so far, and reports are coming in that the bees are doing finely. *May be* we shall have one of the old-fashioned honey seasons this year.

WHEN the forms for our last issue were about half off, we found we were obliged to make our journal 56 pages instead of 52, as announced. This made almost a double number. In this issue we give 16 pages extra.

THE third number of the *California Bee-keeper* is at hand, and it is making great improvements. It is not only well printed and typographically neat, but it is well edited. It starts out right, and has begun in a large field. We wish it every measure of success.

W. B. WESTCOTT & Co., of St. Louis, say that the lower prices on sugar will affect the lower grades of honey. First-class honey is a luxury, so they say, and not a staple, and the tariff reduction on sugar will not affect its sale. We are inclined to think they are right.

THE *Canadian Bee Journal* seems to flourish in the hands of the senior editor, Mr. D. A. Jones, despite the fact that his best man, Mr. F. H. McPherson, is unable to render his usual assistance on account of the accident. Mr. Jones is infusing into it a good deal of sound practical experience.

As it is now approaching the time out of all the year when the bees are supposed to yield their owners returns, we must ask our contributors to let the subject of wintering drop for the present, and take up the more seasonable ones of how to get a honey crop, taking the same off, and marketing, and what implements or devices are best suited to accomplish these ends with the least labor.

JUST after our last issue went to press, we learned that George H. Knickerbocker, secretary of the New York State Bee-keepers' Association, lost by fire his honey-house and workshop, and nearly all its contents, on the morning of April 1, about 4 o'clock. He says the origin of the fire is a mystery. Many of his books and papers were also burned. It was about two-thirds covered by insurance.

MR. HUTCHINSON, of the *Review*, page 104, makes this very kind notice:

The editorial department of GLEANINGS has improved wonderfully of late. It is no uncommon thing now to be able to cut out wisdom in solid chunks like the following."

And then he quotes our editorial in regard to the large or small bee-keeper, found on page 287. Thank you, friend H. Such an encomium is appreciated, inasmuch as it comes from one who not infrequently writes "solid chunks" himself.

If advertisers would tell how long their advertisement is to run, and how much space it is to occupy, it would save much annoyance and correspondence on the part of our advertising clerk. We speak of this, not in a complaining way, but very few give very definite instructions on these two points; namely, amount of space and length of time to run. If you do not know how long it is to run, say, "Continue till forbidden." This is definite, and then we know what to do.

THE *Review* indorses what we said about having not only frames and hives movable, but even movable *apiaries*. Yes, that is what we are coming to. They do not need movable apiaries down there in Cuba, where they can keep profitably 500 colonies in one location (see J. A. Osburn's article elsewhere); but in most places of the United States a location will not support more than 100 colonies; and if there is any considerable increase in colonies, they must be put in two or more out-yards.

#### BEE-ESCAPES FOR EXTRACTING IN CALIFORNIA.

IN the *California Bee-keeper*, Mr. J. F. McIntyre says the bee-escapes for extracting have not come up to his expectations. The bees went down as folks said they would. But he says: "I have left the escape on for three days and three nights; and as only about half the bees were out, I thought it would be a little quicker to brush them off the combs. So I put the escapes away." Certainly a good many must have tried the bee-escapes last year for extracting. George H. Ashby, of New York, said at the Albany convention they had proved to be a grand success with him. Will he please tell us more about it? We should like to get other reports of experiments with the bee-escape.

#### BEAUTIFUL MAY.

NOW is the time to plant almost every thing that grows in a garden. On our grounds we are not only putting in corn and beans, but squashes, cucumbers, bush lima beans, etc. It is true, some of them may come to grief; but it is only a small job to plant more, and there is quite a chance of getting a crop. Last season we planted Corey corn and kidney wax beans so early that I myself feared it was time and pains wasted. Well, both made a crop; and the only thing we felt sorry about was that we had not planted more while we were about it. The green corn brought 25 cts. per dozen ears, and the wax beans sold for 10 cts. *per quart*. We already have potatoes nearly knee-high. They were started, however, in the greenhouse. We saved them from one frost by bending them over and scraping dirt enough over them to hold them down. And, judging from the cold north wind that is blowing now, we may have to do it again to-night, April 28. Fruit-trees are full of bloom, and Michel's Early strawberries are showing quite a number of blossoms. As we have not had a sprinkle of rain for ten days, we have been having a splendid time for preparing the ground and putting in crops.

#### THE N. A. B. K. A. AND BEE-KEEPERS' UNION.

WE wish to correct a misapprehension under which we were laboring in our answer to E. France, to the effect that the Bee-keepers' Union should not be absorbed into the N. A. B. K. A. We see by the *American Bee Journal*, "that the Union is already and has been a part and parcel of the Association, so far as its influence and protective care are concerned." As the Union has been a great

success, history shows that its incorporation into the N. A. B. K. A. is and has been a good thing.

WE mentioned editorially in the last issue, that three patents had been granted on a certain implement to be used in the apiary. We have since learned that there are now *four* patents on this one thing, all within a year. Nay, further: Two others have written us, asking whether we thought it would pay them to issue a patent on this same thing. We replied that there were already four patents on it, and advised them not to be in a hurry to waste their money.

THE *Review* suggests that we call frames not closed-end, *open-end frames*. That might do. But there are some open-end frames that are fixed or spaced at regular distances; for instance, the Van Deusen. There are two kinds of frames in use—those that are fixed and those that are not fixed. We want to distinguish the two in some way. Call the former "fixed" and the latter "loose" frames. "Unspaced" frames would perhaps be more accurate, but it is a little awkward, and not as short as "loose" frames. Our industry is progressing, and accurate *short* names is what we want. Suggestions are in order.

#### FOLLOWING UP SLANDEROUS REPORTS.

THE honey-business is still being slandered to a considerable extent in the newspapers, and it is the duty of the subscribers of said papers to send in a mild and gentlemanly protest. If an editor were to receive a couple of hundred of such, immediately after the issue of his paper containing such slander on our industry, he would begin to think there was something wrong; and if he did not insert one or more of them he would be careful that such stories did not find a repetition in his columns. The comb-honey yarn appeared in the *National Tribune*, under date of Feb. 19. One of its subscribers, however, sent a vigorous protest, which was published in the next issue of that paper. To show the falsity of its position, he sent them one of our cards, to the effect that we offer \$1000 to any one showing a sample of artificial comb honey, and then added that this offer has been out for several years, and has not yet been taken up. Individual bee-keepers can do more than editors; and a hundred protests from subscribers will have a wonderful effect. Don't forget to follow them up.

#### HANDLING HIVES INSTEAD OF FRAMES; LOWER COST, NOT HIGHER PRICES ON HONEY.

A CORRESPONDENT, A. F. Brown, of Huntington, Fla., writes:

I keep bees for money, not for the pleasure, as some do; therefore I take advantage of all short cuts. I find to-day I do not do the work on a dozen colonies that I did on one, five years ago. I handle *hives* now; then I handled *frames*, and other things in the same way. You see the point. It is like a plow taking the place of a hoe.

Friend B. hits the point exactly. There is a good deal more good sense in trying to reduce the *cost* of a pound of honey than in trying to raise the *selling price*. Sooner or later bee-keeping has got to resolve itself into the handling of hives more, and frames less; and Mr. Heddon deserves no little credit for helping to start this idea. But in order to carry it out it is not necessary to have shallow brood-chambers. A Langstroth hive with fixed distances can be manipulated in such a way as to virtually handle hives instead of individual frames. It may be truthfully said, that old bee-keepers do not spend the time they once did over their

bees; and we think it is equally true that, as our industry progresses, bee-keepers *as a class* to-day, or in the near future, will not spend the time over their bees they did a few years ago; in other words, they will get a thousand pounds of honey with less labor. We have *got* to handle hives more and frames less, to stand the prices. We have got to do things more in a wholesale way, in order to meet competition.

#### GOOD WORK IN THE ILLINOIS STATE LEGISLATURE FOR THE BEE-KEEPER.

WE observe by the *American Bee Journal*, that the foul-brood bill, introduced into the Illinois State Legislature by the Hon. W. S. Smith, of Macon, will probably become a law. Good! Let other States go and do likewise. The bill introduced by J. M. Hambaugh, see p. 326, to prevent the spraying of fruit-trees when in blossom, is also about to become a law. Mr. H. writes to the *American Bee Journal* as follows:

Hip, hip, hurrah! We have carried the "Spraying Bill" through the committee, flying. My speech, with letters, etc., have been ordered printed, and a copy placed on each member's desk. Tally one for bee culture.

J. M. HAMBAGH.

Springfield, Ill., April 11.

We want the moral effect of these laws, even if we do not have to enforce them.

#### GREAT INVENTIONS: HOW DO THEY COME?

THE most valuable discoveries do not always come by hard study, with the view of arriving at a definite end. No, they sometimes come by accident; and the one who met the accident is keen enough to recognize that in it there is a *principle*. Mr. Hruschka, who invented the extractor, did not study it out. His little boy, you remember, by chance happened to whirl a basket containing a piece of comb around in the air. Drops of honey flew out. Hruschka was sharp enough to see in this the workings of *centrifugal force*, and that this same force could be made to extract honey from the combs. The invention of the steam-engine—that is, its main principle—was not studied out, but was largely the result of accident—or, if you please, lucky blundering. There is not so much in studying out a thing as there is in the ability to grasp a good thing when it presents itself. There is a great deal of folderol about lying awake nights, wasting strength and losing valuable sleep in developing a great (?) invention. The best ideas do not usually come to us when we are tired and worn out, and when sleep is the order of the moment. When they do appear they usually come in the freshness of the morning, after a good sleep, and *then* they come forth with almost startling suddenness. Would-be bee-hive inventors, instead of making a hive conform *entirely* to the habits of the bees, should consult a *little* the habits of the genus *homo*.

#### DEAD BEATS, AND WHAT IS A DEAD BEAT?

PERHAPS many of you may say, "A man who does not pay his debts." Not exactly, friends. Very good men, sometimes, in consequence of sudden accidents or sickness, are unable to pay their debts; and where a man is unable to do as he would like, it is not fair to conclude that he is a dead beat. It is like calling a man a liar because he told one lie; or, if you choose, telling a man he lies because he tells something that is not true. In all these things it is the state of the heart rather than the act. Some little time ago I spoke of people who buy honey, and then, after a while, excuse themselves from paying for it by claiming that it was not pure. Such men I should call dead beats, and I think dead beats should be advertised far



and wide, that honest men may not be imposed upon by them. March 5, 1888, John W. Manning, Salineville, Columbiana Co., O., corresponded with us in regard to some maple sugar and honey. After getting prices, and very likely samples, he sent us his order. It reads as follows:

Inclosed find \$8.65. Send the following goods by express.

J. W. MANNING.

Well, it transpired that the \$8.65 was *not* inclosed; but on the back of the order our friend writes:

Send C. O. D. I had not time to get order in this mail.

Now, as C. O. D. would make additional trouble and expense, we thought to do him a kindness by sending him the honey and sugar right along. We know how it is ourselves a good many times, when we hardly have time to get an important order off before the mail closes. Well, we did not get our money; and the book-keepers, after a long lot of writing and waiting, along in the fall of 1889 got the following:

A. I. Root:—*Dear Sir:*—

Yours of Oct. 18th is received, and in reply I will say that, if I owe you the amount, \$6.74, as you claim, and due since March, 1888, I will settle the same as soon as I possibly can. The way I suppose the matter came in this shape, *it was no fault of mine. I was away from home about that time, for some length of time, and the matter was not brought to my attention, and I did not get a statement to the effect you speak about.* J. W. M.

Well, the above was bad enough, but we concluded to let it go. By the way, I want to say that a real good business man will not fail in his fair and square promises, even if he is called away from home; therefore his statement, which we have put in italics, we do think is true—that it is no fault of his. Well, we kept on urging him until Aug. 26, 1890, when he winds up with the following:

If you think it advisable to throw off a part you charge for your imitation honey, let me know. J. M.

Since then we have been unable to get any thing from him at all. It affords a good illustration of the way one is led to step from the straight and narrow path, and to yield to temptation. First, he said he did not have time to get his money order made out before the mail closed, and asked us to send along the goods *without* the money. This may have been true, and he may have been honest in what he said. But after he got the goods, his anxiety to pay the just debt seems to have a good deal abated. He next excuses himself for breaking his promise, by saying that he was "away from home." Then he makes different kinds of pretexts, and pretends to be offended because of our numerous duns, as if it were our duty to give up and let it go and sit down with folded hands, and be happy. Finally he decides, *two years and five months after* we sent him the honey without the money, that (come to think of it) the honey was "*imitation*." Now, if we have any more such men in the State of Ohio, or any other State, let us have their names printed so that we may all get acquainted with them. I tell you, there is nothing like "*getting acquainted*."

#### A 20 PER CENT AD VALOREM DUTY ON IMPORTED QUEENS.

Mr. W. C. Frazier, of Atlantic, Ia., recently wrote us, asking whether there was a duty on imported queens. We replied, to the effect that there was none, because queen-bees were used for breeding-purposes, and therefore exempt. It seems that Mr. Frazier was not entirely satisfied, and so he wrote to the deputy collector of customs, in New York, in regard to the matter. His reply is as follows:

CUSTOM-HOUSE, NEW YORK,  
Collector's Office.  
W. C. Frazier, Esq., Atlantic, Iowa:

Apr. 2, 1891.

*Str:*—In reply to your letter of the 30th ult., I have to say that "bees" would be classified as "live animals" upon importation, dutiable at 20 per cent *ad valorem*, under N. T., 251. Animals imported specially for breeding-purposes are exempt from duty under N. T., 482, upon compliance with the requirements of the law and Treasury regulations—to wit, production of a duly authenticated invoice—certificate of identification sworn to by the importer—certificate of score and pedigree, authenticated by the proper custodian of the book of record established for the breed in question, and report of the apiarian after examination. The importation of "bees" through the mails from Italy is prohibited by law, and, if so imported, they would be liable to fine and seizure. Respectfully yours,

H. D. STANWOOD,  
Deputy Collector.

We thought there must be some mistake, and, if so, Prof. Cook was just the man to see that the matter were set right, as he had, in years gone by, handled successfully the transmission of queens through the mails. He wrote to his friend and former co-worker of the Michigan Agricultural College, Edwin Willits, now Acting Secretary of the Department of Agriculture, Washington, D. C.; and his reply, which Prof. Cook has very kindly forwarded on to us, is as below:

DEPARTMENT OF AGRICULTURE,  
OFFICE OF THE SECRETARY,  
WASHINGTON, D. C.

Prof. A. J. Cook:—Yours of the 16th instant is at hand, relative to the bee-question and the importation of queen-bees from Italy, upon which, under the new tariff, they charge 20 per cent duty. I have written to the Secretary of the Treasury this day, inclosing a copy of the correspondence, and asking him if it is possible for him to make a ruling that shall let bees come in free of duty.

There is no question but that bees should be classified under the new Tariff Act, as animals; and the general law is, that the duty on imported animals shall be twenty per cent, under Section 251 of the Tariff Act; but in the free list, under Section 482, any animal imported specially for breeding-purposes shall be let in free; and then comes the proviso, which is, in substance, that, in order to relieve the importation from the duty, it shall conform to the requirement stated in the Deputy Collector's letter. It is very manifest, that the person who drafted the proviso had in his eye only domestic animals, and had no thought of any other animals, and, in fact, no thought of bees, or that bees would be called "animals." I am afraid that the proviso is so restricted that the Secretary of the Treasury will have no discretion. However, I have asked him to see whether he can give it some construction that will help us out.

EDWIN WILLITS,  
Acting Secretary.

Accompanying this letter from the secretary was one from Prof. Cook, which we reproduce herewith:

Dear Friend Root:—This looks bad. We have a friend "in court" who will do all that is possible for us. It will be bad if we have to wait for special legislation.

A. J. COOK.

Ag'l College, Mich., Apr. 24.

It looks as though we should have to submit to the inevitable until special legislation can be enacted in our behalf. As the acting secretary says, "The person who drafted the proviso had in his eye only domestic animals." Perhaps I should add further, that the deputy collector has probably made an error in regard to bees through the mails. They are not prohibited by law. The January Postal Guide for 1891 gives a list of the European countries to which queen-bees may be sent, and in that list is Italy. It would be a little strange if, reciprocally, Italy could not send any queens to us. If she can not, it is a very recent enactment of the postal magnates. We will have the law tested again at an early date.

## OUR SHANE YARD.

We are just about to put 50 colonies in our out-apiary on the Hoffman frames. We have been getting together the hives and frames, and in a day or two we expect to transfer that whole yard of loose frames to fixed frames. There are a good many hybrids among the lot; and, judging from the looks of the old hives in which they now are, they are adepts at smearing propolis over every thing.

## HOFFMAN FRAMES.

For the last few days we have been trying the Hoffman frames in our home yard. We had a few colonies transferred to them last summer. If the day is cold, the propolis will come apart with a little snap, and make the bees a little "touchy." But we are not supposed to handle bees on cold days, usually. If the day is warm, they pry apart very easily. In fact, the most of them we could push apart with our fingers, without any screwdriver or wedge, and these have been used about a year now. We find Hoffman frames will kill bees if handled improperly. By using a little caution it can be avoided.

Perhaps we should say right here, while we are transferring into Hoffman frames to a considerable extent, we would not advise others to do it to an equal extent. We can afford to carry on experiments on a larger scale than many of the bee-keepers who have no bee-journal in whose interest such experiments are made.

## SELLING SECRETS, ETC.

THE friends of Dr. Hall urge that he has as good a right to charge \$4.00 for his little pamphlet as a physician has to charge \$4.00 or \$5.00, or even \$10.00, for simply a prescription. It seems to me that a good many have some very loose ideas in this matter. A physician who has spent years in study, and, after that, still more years in the practice of surgery, acquires a knowledge that enables him to determine from long experience just what surgery or medicine may do for a patient. But he must see the patient personally, and give the case a careful personal examination; and his directions and decision to one patient would by no manner of means answer for even *two* patients, let alone several hundred or a thousand. It may be worth \$4.00 or \$10.00 for an expert to give his undivided attention to a single patient for one hour or even half an hour. But suppose he should undertake to print a little circular, which he hands to the patient who sought his skill, and then pretend that such printed directions would answer the purpose, and was worth \$4.00. The thing would be impossible. A *great book* on surgery or medicine can be bought for \$4.00; so can a great book on almost any subject whereon mankind wishes information, for a like amount of money. Books have a market value, as well as a load of wood or a load of coal; and he who pays a dollar should get a fair-sized book; and whenever one asks several dollars or one dollar, or even *fifty cents*, for what can be printed on a single sheet of paper, you can put him down as a humbug and a fraud. Valuable discoveries that come up suddenly, before the particulars have had time to get into books, will always be found in our papers and periodicals devoted to the subject in question. I know I have been over this ground again and again; but I propose to *keep* going over it so long as there is so much blundering and fraud. If there is any secret of general value that can not be obtained without the payment of several dollars, bring it to my notice and I will furnish the money, and then we shall all reap the benefit of it together.

## SHALL WE FORGIVE AS WE HOPE TO BE FORGIVEN?

AFTER reading friend Easy's joke, on page 380, a shadow fell unconsciously across my spirits. For a little time I groped mentally to recollect what caused it. Finally I recalled a clipping I had seen from a newspaper. Here it is:

"CHARLES! FORGIVE ME."

## THE PENITENT WIFE WRITES HER FORSAKEN OTHER HALF.

Under date of April 20, the Boston *Herald* has the following correspondence from Lewiston, relative to the sensational elopement case, the parties of which reside at Mechanic Falls:

Mr. C. H. Cotton, of Mechanic Falls, who has recently moved to the city, has received a letter from his wife, dated Los Angeles, Cal. In the letter she says:

"Charles:—Please forgive me. Please don't hate me; but I won't ask you to love me again. I don't deserve love or any thing. I am an undone person. Oh how I wish I could see you to-night and have a talk with you! I do want to see you dreadful bad, but I never expect to see you again. It seems as if I never could stand it. From your wife,

AMANDA."

Mrs. Cotton, it will be remembered, left her husband December 22, and fled with her little daughter to Boston, where she is supposed to have joined Editor Mason, of the *Bee-Keepers' Advance*, who was visiting in Boston with his wife at the time. Mason disappeared from Boston the same day, and has not been heard from by his wife or family since. Mr. Cotton feels sure that the couple are living together in California.

Mr. Cotton has his son with him in Lewiston, and would like to have his daughter, but says his wife can get back the same way she went. The Mason property will probably be settled in the coming term of court.

Now, it is more than likely that all the parties concerned will see GLEANINGS, and may be the little plea I put in for these two deluded friends has been the means of bringing both to penitence; if so, may God in his infinite goodness and mercy grant that GLEANINGS may be listened to again. I do not know what is customary in such circumstances; but my advice is this: Let all parties concerned go back like the prodigal son. Friend C. is evidently willing that his wife should come back, if she has a mind to. For God's sake, dear sister, come back. If you have not already done so, separate yourself this minute from your guilty partner, and thus help *him* as far as possible to come back too. The thing is bad—terribly bad and wicked as it stands now; but it is never too late to mend. Forgive us our debts as we forgive our debtors. And let me entreat the bee-keeping world to drop it all and forget the past, that those two people who have been entrapped by Satan may repent and come back to their homes. Friend Mason, if this meets your eye I entreat you to come back at once and undo, while life lasts, the wrong you have done. I am sure, from what I know of you, that no happiness nor peace has come from this terrible thing. Last evening a friend of mine was examined with the view of being taken into our church. Some unfortunate things had occurred in his past life. During the past year, however, he has been a most exemplary Christian man, constant in attendance at the church, and exhibiting all the Christian graces toward those all around him. Our good pastor suggested that, in view of this, we need not stir up the past. Any man or woman who has done their duty well and faithfully a whole year, and is still ready to do well and faithfully every thing in their power, should be admitted to the church, in my opinion—that is, of course, providing such parties subscribe to the creed, or general system of tenets, held by such society. Very likely the *world* objects to letting by-gones



be by-gones; but Christ Jesus says, "Come unto me, all ye that labor, and are heavy laden;" and he does not make any exceptions in his invitation. Why, then, should we?

## SPECIAL NOTICES.

Our authorized agents, Hebblewhite & Co., 416 George St., Sidney, N. S. W., Australia, and Leonard T. Chambers, Adelaide, South Australia, and R. J. Cribb, Milton, Brisbane, Queensland, will receive subscriptions for GLEANINGS for Australia and adjacent islands.

### MACHINE FOR BERRY-PICKING.

The apparatus illustrated on page 176, March 1st issue, will cost, well made, about 30 cts.; in lots of 10 we can furnish them for 25 cts. each—that is, if made just right for a quart berry-box. If wanted by mail, the price will be 15 cts. more for postage. The expense is a little more than I expected. Perhaps the apparatus described on page 383 of this issue will answer in place of it.

### DOVETAILED HIVES, LAST YEAR'S PATTERN.

We have, packed away for shipment, about 1000 No. 2 Dovetailed hives of last year's pattern, being  $\frac{1}{2}$  inch narrower than we now make them, and having the old-style all-wood frames and slatted honey-boards. These we will furnish at last year's prices; namely, \$9.00 for 10 without sections, tin separators, and fdn. starters, or \$13.50 complete in flat. Same discounts for quantity apply as on new style.

### EXTRACTED HONEY WANTED.

If any of our readers have any extracted honey to sell, either best or off grade, please mail us samples, stating how much you have, how it is put up, and what you want for it; and we will try to help you find a customer. We are supplying honey-jumble makers with off grades, and are sold out of all grades except the lot in New York, mentioned in the notice below.

### CHOICE EXTRACTED HONEY.

We have, in New York city, 10 cases of 120 lbs. each, both of choice white sage extracted honey, and Ball's alfalfa extracted. To move this quick we offer it at 9 $\frac{1}{2}$ ¢ in single-case lots; 2 cases or more, 9¢ per lb.; or 8 $\frac{1}{2}$ ¢ per lb. for the lot f. o. b. New York, if unsold on receipt of order. This is a good opportunity to get some very choice extracted honey at a low price. Who wants it?

### ADVANCE IN COMB FOUNDATION.

We call attention again to the advance in price of comb fdn. as announced in last number. The revised table of prices is as follows:

NAME OF GRADE.	Sq. ft. per lb.	Price per lb. in lots not less than—				
		1 lb.	10 lbs.	25 lbs.	50 lbs.	100 lbs.
Heavy brood fdn.	4 to 5	48	47	46	45	44
Medium " "	5 to 6	48	47	46	46	44
Light " "	7 to 8	51	50	49	48	47
Thin Surplus " "	10	58	57	56	55	54
Ex. thin " "	11 to 12	68	67	66	65	64
Van Deusen thin flat bottom.....	12	68	67	60	59	58

### TOBACCO DUST FOR BUGS AND INSECTS.

As this is now the cheapest insecticide, it will be well to give it a good trial this season. It is not only cheaper *per pound* than slugshot, but it is so light that a single pound makes a great lot of it; and a whole hundred pounds costs only \$1.75. A few days ago I remonstrated with one of our men because he had used it so lavishly when only a few bugs had made their appearance. When he told me he had used altogether only a single pound, costing but a cent and three-fourths, I concluded that his extravagance was not very great after all.

### RUBBER TUBING, ETC.

So large a demand has sprung up for this commodity that we are enabled to give the following reduced prices: Per foot, 5 cents; 10 feet, 45 cents; 100 feet, \$3.50. The above prices include postage by mail. If ordered by express or freight, with other goods,  $\frac{1}{2}$  cent per foot less than above prices. The hard-rubber terminal tubes will be, after this date,

5 cents each, or 45 cents for 10. Many times, under some circumstances, say, for instance, when one is away from home, the ordinary rubber-bulb syringe is more convenient than the pail of water and rubber tube described in our March issue; therefore we have made arrangements to furnish a good syringe, with good-sized bulbs made of best quality of pure rubber, for 30 cents each; by mail, 35. By inquiring prices at your drugstores, you can see whether it will pay you to send to us for them.

### SHIPPING GOODS PROMPTLY.

A year ago now we were so crowded with orders that we were compelled to run our factory day and night, to keep anywhere within reach. A great many good friends were greatly tried by our delay in getting their goods off. We are glad to tell you that, so far, we are taking care of orders promptly, and goods are going off, as a rule, within three or four days after receiving the orders. We have been out of material for bee-veils, and waiting for more to come; but that is now here; and by the time this goes out all orders will be filled. We were also behind on foundation-mills; but as we write, all orders are filled, and mills are being made for stock ready to put into orders as fast as received. I believe we are up in all departments except, perhaps, the vegetable-plant business, which has had an unusual boom. In a few cases, where something irregular is ordered that has to be made in the wood-working department, there is a few days' delay; but as a rule you may depend on having your orders shipped promptly. We have a good deal of stock piled up, all ready to be marked.

### SEED POTATOES.

We can furnish every thing advertised in our price list except the Early Ohio; and, by the way, is it not a little significant that the Early Ohio potatoes are gone, and none are to be had anywhere? A great many will tell you that they have some of the new kinds that are "just as good" or a little better. But is there really a better potato known than the Early Ohio? We have some Early Puritans that came from the South, that were a second crop—that is, they raised two crops in one season. As these last were dug very late they do not show nearly as much tendency to sprout as those dug and put away earlier in the season. They are, however, a little under size. The price is \$2.00 per bushel, or \$5.00 per barrel. In some respects we prefer the Early Puritan to the Early Ohio. We have also a fine lot of Monroe Seeding potatoes, put up in new barrels, ready to ship. These barrels, however, do not hold *quite* 11 pecks. The price is \$5.00 per barrel. The Monroe Seeding, be it remembered, is the potato that T. B. Terry places above all others. It is, however, a late one.

### VEGETABLE-PLANTS MAY 1.

Well, here we are again, with the demand greater than the supply. We can furnish almost every thing by tens and hundreds; but when orders come for thousands, as they do frequently of late, we are not big enough for the business. We can furnish good asparagus-plants in *any quantity*; and the experience of last season shows that they may be put out any time in the month of May, even though they may have made large shoots. Cauliflower-plants, we have very fine ones in any quantity; but almost every thing in the line of cabbage-plants is picked up a little before they are as large and strongly rooted as we should like to see them. Tomato-plants are rather backward, on account of the prevailing north winds. Of course, the windmill supplies plenty of water, but it does not quite answer the purpose like warm showers, with a light wind from the south. Pepper-plants are scarcely strong enough to ship safely; and our sweet-potato plants are not up yet. Strawberry-plants are going daily by the thousand; but as they are beginning to put out blossoms, they will not be as good to plant many days. By picking off the blossoms, however, and the large outside leaves, they will do very well for some time yet. We are doing all we can to get new plants—that is, sets from runners, strong enough to ship as early as possible. We shall probably have a limited number of nice ones in June. The demand for Haverland strawberry-plants has been tremendous. Besides our own stock we have purchased *eleven thousand* of our neighbors; and if anybody has some nice ones which he can furnish at wholesale price, we should be glad to hear from him.

## Bee-Hives, Sections, Etc.

**BEST GOODS at LOWEST PRICES.**

We make 15,000 sections per hour. Can fill orders promptly. Write for free, illustrated catalog.

**G. B. LEWIS CO., WATERTOWN, WIS.**

In responding to this advertisement mention GLEANINGS.

**B**EEES and yellow **E**VEN the Best Se- **E**xcel. They  
Italian Queens lect Tested \$1.25. do all other  
for sale in June Untested \$1.00. seasons my  
at Chenango Order early. old custom-  
Valley Apiary. Send for circular. ers will say.  
MRS. OLIVER COLE, Sherburne, Chenango Co., N. Y.  
Please mention this paper.

### OUR ROOT BEES.

We have Italians that "Root" the flowers o'er and o'er.

At the end of the season they will score you 100 lbs. or more.

Tested queens in May, \$1.50; 3 for \$4.00.

Unt'd " 1.00; 3 for 2.50.

" " June, .75; 3 for 2.00.

1, 2, and 3 frame nuclei from \$2.25 to \$4.00, with queen. Pounds of bees. All kinds of apianian supplies, etc. Catalogue free. 9tfdb

**JOHN NEBEL & SON, High Hill, Mo.**

Please mention this paper.

### Queens Ready to Mail.

Safe arrival guaranteed. Untested (Italians) \$1; 3 for \$2.75, and \$9.00 per doz. Tested queens all sold, but will have more by June 1st (reared this season) at \$2.00. Order early, but do not say for us to send queens before you actually wish them sent. Make money orders payable at Clifton. Send for price list, etc., to

**COLWICK & COLWICK,**

**Norse, Bosque Co., Tex.**

4tfdb

Please mention this paper.

### FOR SALE CHEAP.

1000 lbs. of bees in wire shipping-cages. 100 queens in May at \$3.00 per doz.

9d **ANTHONY OPP, Helena, Phillips Co., Ark.**

**Tested** Italian queens from \$1 to \$1.50. Untested, 75 cents. Address

**F. C. MORROW, WALLACEBURG, ARK.**

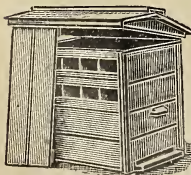
Please mention this paper.

## Sweet Honey AND PLENTY OF IT.

By using the latest and most convenient hive for everybody. Now in use five different kinds. Also Sections and Supplies. Address

**D. STUTZMAN, Ligonier, Ind.**

Please mention this paper.



### A CHANCE TO MAKE MONEY.

We want an agent in every county to sell our chaff hives, on a liberal commission. Send \$1.75 and get a sample nailed up and painted, and you are ready to take orders at once. Winter cases, thin Dovetailed hives, and a full line of supplies. Send for list and terms.

**ROE & KIRKPATRICK,**  
9d **Union City, Ind.**

Please mention this paper.

## Bees at Auction!

At Summit, Union Co., N. J., 80 colonies Pure Italians, and every thing needed to run a first-class apiary for queens and extracted honey, will be sold at auction at the apiary, on May 5th, at 1 o'clock p. m.

9d **W. B. COGGESHALL, Summit, N. J.**  
Please mention this paper.

## LADIES' FINE SHOES.

Price \$2.17 Postpaid.

Genuine Kid, Soft Soles, Perfect Fitting, Stylish, Comfortable, and made to wear. Try them. You will be pleased. Sizes 1 to 7; widths, C, D, E, EE. What size do you wear? Is your foot broad or narrow? Do you want a broad or narrow toe shoe? Sure fit, if you answer these questions.

I SELL GOOD SHOES.

NO CHEAP STUFF.

Send P. O. order, registered letter, or N. Y. draft.

**C. L. GRIESINGER, MEDINA, O.**

Reference—Gleanings.

8-9-10d.

Please mention this paper.

## ITALIANS

Box 77.

Tested queen, \$1.50; Untested, \$1.00. Nuclei, brood, and bees by the lb. Send for price list.  
**MRS. A. M. KNEELAND,**  
Mulberry Grove, Bond Co., Ill.



**BEES FOR SALE.**  
**COLONIES,**  
**NUCLEI,**  
**and QUEENS**  
at living rates. Send for circular and price list to

**C. C. VAUCHN,**  
Columbia, Tenn.



6tfdb

In responding to this advertisement mention GLEANINGS.

## DO YOU KNOW

that you can buy a good hive for 55 cts., 100 brood-frames for \$1.00? Nice foundation cheap. Smokers and feeders, and every thing you need. You can save money by sending an order. Special terms to dealers. 8-9-10d

**W. H. BRIGHT, Mazeppa, Minn.**

In responding to this advertisement mention GLEANINGS.

**MY 23D ANNUAL CATALOGUE OF ITALIAN, CYPRIAN, and HOLY-LAND BEES, QUEENS, NUCLEI, COLONIES, and SUPPLIES; also EGGS FOR HATCHING, can be had by sending me your address. H. H. BROWN, Light St., Col. Co., Pa.**

## HOLY-LAND QUEENS.

A specialty of breeding them, and strict business. Will be sold at the most reasonable prices. 9d

**GEO. D. RAUDENBUSH,**

445 Chestnut St., Reading, Pa.

Please mention this paper.

## NEBRASKA

3-frame nucleus (without queen) \$2.00.

3-frame nucleus (with tested queen) \$3.50.

3-frame nucleus (with queen from our own apiary) each, \$2.50. Pure Italian queens, each, \$1.50. Descriptive price list free.

Box 874.

7tfdb

Please mention this paper.

**J. M. YOUNG,**  
**Plattsmouth, Neb.**

## ITALIAN QUEENS FOR SALE.

May or June, tested, \$1.50; untested, \$1.00. July and August, tested, \$1.00; untested, 75 cts. Bees at \$1.00 per lb. Make money order payable at Waynesburg, Greene Co., Pa.

**MRS. A. A. SIMPSON,**  
9-16db **Swarts, Pa.**

Please mention this paper.

**Printing,** Note Heads, Bill Heads, Envelopes, Business Cards 250 for \$1.00

Post Paid, Good honest work and paper. 50 Ladies Cards in Steel Plate script 25 c. No Samples. 12 Years in Business. Send Copy and dollar to  
**BURTON L. SAGE, New Haven, Conn.**  
Please mention this paper. 5-4db



## On Their Own Merits.

I am making a specialty of breeding **Golden and Albino Italian Queens**. My five-banded bees are equal to any as honey-gatherers, and they are the most beautiful and gentlest bees known. Warranted queens, May, \$1.25; six for \$6; after June 1, \$1; six for \$5. Satisfaction guaranteed. I have a few 3-banded tested queens at \$1 each.

**CHARLES D. DUVAL,**  
Spencerville, Mont'g Co., Md.  
Please mention this paper.

9tfdb  
1tfdb

## CONTROL YOUR SWARMS.

N. D. West's coil-wire queen-cell protectors will do it, and you can **REQUEEN** your apiary during the swarming season. Pronounced the **BEST** by such men as

**CAPT. J. E. HETHERINGTON, CHERRY VALLEY, N. Y.,**  
**P. H. ELWOOD, STARKVILLE, N. Y.,**

and others. Cell-protectors, \$3.00 per 100, or 12 for 60c, by mail. Cages, \$5.00 per 100, or 12 for \$1.00, by mail. Samples of both, with circular explaining, 25 cts. See cut and description on page 321. Patent applied for. Address

**N. D. WEST, MIDDLEBURGH, SCHOHARIE CO., N. Y.**  
In responding to this advertisement mention GLEANINGS.

**TESTED ITALIAN QUEENS, \$1.00.**  
**UNTESTED, 60 CTS.**  
**SELECTED TESTED, \$1.50.**  
**STUARD BROS.,**  
Sparta, White Co., Tennessee.  
Please mention this paper.

917d

## ITALIAN \$1.00 QUEENS.

Untested Queens, 75 cts. each. \$6.00 per dozen.  
Now ready to mail.

**H. Fitz Hart, Avery p. o., New Iberia, La.**  
In responding to this advertisement mention GLEANINGS.

## BEE & SUPPLIES FOR IOWA.

Send for my supplement for 1891, now ready (no new catalogue). Say whether you have my catalogue dated 1889 and 1890. Address *Olive Foster*,  
5-tfdd Mt. Vernon, Linn Co., Iowa.

In responding to this advertisement mention GLEANINGS.

## Queens! Queens! Queens!

If you want bees that will beat any thing you ever saw in every respect, try our strain of Italians. Warranted queens, each, \$1.00; six, \$4.50. 8-9-10d  
**ORDER NOW, PAY UPON ARRIVAL.**

**JAS. & F. B. YOCKEY,**  
NORTH WASHINGTON, WESTM'D CO., PA.  
In responding to this advertisement mention GLEANINGS.

## BEE-KEEPER'S GUIDE.

16TH THOUSAND JUST OUT.

Plain, Practical, Scientific. Every farmer and bee-keeper should have it.

PRICE REDUCED TO \$1.00. Liberal discount to dealers. Address 8-18db

**A. J. COOK, Agricultural College, Mich.**  
Please mention GLEANINGS.

## UNTESTED QUEENS,

until June 1st, \$1.00; after June 1st, 75 cts.; \$8.00 per doz. Tested queens, after June 1st, \$1.50. Select tested, \$2.00. Bees by the pound until June 1st, \$1; after June 1st, 75 cts. Can supply any demand from first of May. 8tfdb

**PAUL L. VIALLO, BAYOU GOULA, LA.**

In responding to this advertisement mention GLEANINGS.

## 5-BANDED GOLDEN ITALIANS.

Beauties! The best workers we ever saw. Work on red clover. Very gentle. Drones  $\frac{1}{2}$  to  $\frac{3}{4}$  yellow. Won **1st Premium at Ill. State Fair** in 1890. Nearly 300 booked for 1891. Warranted Queens, May, \$1.25, 6 for \$6.00; after June 1st \$1.00, 6 for \$5.00. Special discount for large orders as to dealers. Have your order booked now in order to get them when wanted. Satisfaction guaranteed. No foul brood. Select Barred Plymouth Rock Eggs, \$1 per 13. Good reference given.

1tfdb **S. F. & I. TREGO, Swedona, Ill.**

In responding to this advertisement mention GLEANINGS.



## HOFFMAN FRAMES.

By cutting the top bar of my spacer, a hanging frame can be worked on the principle of the

Hoffman frame. Price of spacers, \$10.00 per 100. 8tfdb **J. B. WILCOX, Manistee, Mich.**

In responding to this advertisement mention GLEANINGS.

## A PAYING CROP.

Grow Popping-Corn. We bought 50 earloads last season, paying from 2 $\frac{1}{2}$  to 3 $\frac{1}{2}$  cts. per pound on the ear. 6-7-8-9d

**Will Want 100 Earloads Next Season.**

Write us, and on receipt of stamps will advise you as to best yielding variety to plant and pop.

**H. R. WRIGHT, 326 Broadway,**  
**Albany, N. Y.**

Reference: Albany County Bank.  
Please mention this paper.

**FOR SALE.**—Eggs of Golden Wyandottes, \$2.00 per 13. Silvers, \$1.00 per 13. Japanese buckwheat, 90c per bushel. Sacks free. 7-10db  
**P. F. RHODES, New Castle, Ind.**

Established 1878.

## SMITH & SMITH,

Wholesale and Retail Manufacturers of

## BEE-KEEPERS' SUPPLIES.

KENTON, OHIO.

Price List Free. 4tfdb Mention Gleanings.

## DR. TINKER'S SPECIALTIES!

The Nonpareil Bee-hive and Winter case, White Poplar Sections, Wood-zinc Queen-Excluders, and the finest and best Perforated Zinc now made.

Send for catalogue of prices, and inclose 25 cts. for the new book, **Bee-keeping for Profit.**

Address **DR. G. L. TINKER,**  
21tfdb New Philadelphia, O.

In writing to advertisers please mention this paper.

## ITALIAN

QUEENS and BEES, and Fine Poultry. Send for price list.

**I. L. PARKER,**  
9tfdb Tracy City, Tenn.

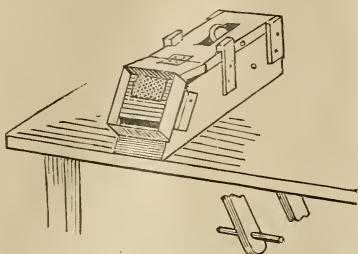
## IMPORTED QUEENS.

In May and June, each, \$2.00  
In July and August, each, 1.80  
In September and October, each, 1.60

Money must be sent in advance. Safe arrival guaranteed. Queens that die en route, if returned in the letter, will be replaced by mail, postpaid. No order for less than 8 queens by express will be accepted.

**CHAS. BIANCONINI,**  
1-11d Bologna, Italy.

## The Burdsall Foundation Fastener



### THE BEST MACHINE MADE.

Satisfaction guaranteed. Send for catalogue and price.

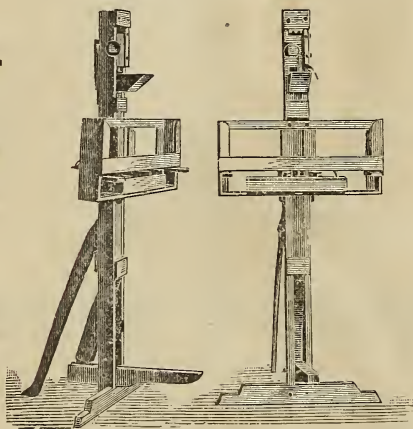
The Burdsall Apiary and Supply Factory,  
7-9d Box 744, Lebanon, Ohio.

In responding to this advertisement mention GLEANINGS.

## PHILO'S AUTOMATIC SECTION-BOX GLUING-MACHINE,

For Putting Together and Automatically Gluing the One and Four-Piece Section-Boxes

It Does its Work with Neatness and Despatch.



No Extra Time Required in Gluing.

This is the only machine on the market that will put the glue right where it belongs without wasting the glue or musing the section.

Price of the combined machine, - - - \$6.00  
For four-piece only, - - - 5.00

E. W. PHILO, Half-Moon, N. Y.

In responding to this advertisement mention GLEANINGS.

## Bee-Keepers' Supplies.

### WHY \* SEND \* LONG \* DISTANCES ?

SEND YOUR ADDRESS (DON'T FORGET THE COUNTY) FOR MY NEW PRICE LIST FOR 1891.

C. P. BISH, Grove City, Mercer Co., Pennsylv'a.

ESTABLISHED IN 1884. 7tfd  
Please mention this paper.

## FOR SALE!

100 colonies of bees, Italians and hybrids, in eight-frame, Langstroth, portico, movable hives. Price for Italian, \$4.50; hybrids, \$4.00 each. I guarantee safe delivery. 7-8-9d

CHRISTOPHER GRIMM, Jefferson, Wis.  
In responding to this advertisement mention GLEANINGS.



3tfd

## CHEAP ENOUGH.

Sections, \$3.00 per 1,000. Foundation, 45 cts. per pound; Chaff Hives, \$1.25 each; Simplicity hives, 90 cts. each; Dovetailed hives, 80 cts. each, and every thing needed in the apiary, cheap. Send for illustrated price list for 1891, free.

"How I Produce Comb Honey,"

by mail, 5 cts. Third edition just out. Address

GEO. E. HILTON, Fremont, Mich.

Please mention this paper.

## HONEY A NEW DISCOVERY.

Differing from all others ever yet made for the purpose.

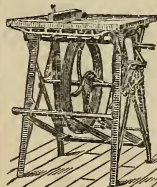
## EXTRACTOR.

It works strong, thorough, neat, handy and rapid, and is the cheapest Extractor known. Send 2-ct. stamp for a circular of 18 pages to REV. A. R. SEAMAN, Connellsville, Fayette Co., Pa. 5-15d

Please mention this paper.

7d

## Barnes' Foot-Power Machinery.



Read what J. I. PARENT, of CHARLTON, N. Y., says—"We cut with one of your Combined Machines last winter 50 chaff hives with 7-inch cap, 100 honey-racks, 500 broad frames, 2,000 honey-boxes, and a great deal of other work. This winter we have doubled the amount of bee-hives, etc., to make, and we expect to do it all with this saw. It will do all you say it will."

Catalogue and Price List free. Address W. F. & JOHN BARNES, 545 Ruby St., Rockford, Ill.

When more convenient, orders for Barnes' Foot-Power Machinery may be sent to me. A. I. ROOT.

23tfd

## ENTOMOLOGICAL NEWS.

This is the title of a monthly magazine published in Philadelphia at one dollar a year. It is managed by practical entomologists, and is a real help to those interested in this most fascinating study.

Insects accurately named for subscribers, and much valuable assistance given collectors.

GIVE IT A TRIAL. Address

E. T. CRESSON, Treasurer,  
Box 1577, Philadelphia, Pa.

7-9d

In responding to this advertisement mention GLEANINGS.

## 1891. 12th Year.

## HEADQUARTERS IN THE SOUTH

For the manufacture and sale of  
BEE-HIVES AND BEE-KEEPERS' SUPPLIES,  
Early Nuclei, and Italian Queens.

Send for Price List.

P. L. VIALLO, N.

Bayou Goula, La.

1tfd

Please mention GLEANINGS.

FRIENDS, if you want three or four L. frame nuclei full of nice Italian bees, queen, and capped brood, or queens, that will give satisfaction, at reasonable prices, write to 7tfd

W. A. SANDERS, Oak Bower, Hart Co., Ga.



## Advanced Bee Culture;

ITS METHODS AND MANAGEMENT. I am now engaged in writing and printing a book that is to bear this title. It is to take the place of my other book, *The Production of Comb Honey*, which will not be re-published. Although the new book will contain at least five or six times as much matter as *The Production of Comb Honey*, yet the price will be only 50 cts. The book is already partly printed, and will probably be out some time in April or May. If any of the friends would like to "help me along" in meeting the expenses of getting out the book, they can do so by sending their orders in advance. Such orders will be most thankfully received, and filled the very day the book is out. I will send the REVIEW one year and the book for \$1.25. The REVIEW will be sent on receipt of order (I have plenty of back numbers to send it from the beginning of the year), and the book as soon as it is out. Stamps taken, either U. S. or Canadian. 10tfdb

W. Z. HUTCHINSON, Flint, Mich.

(\*) In responding to this advertisement mention GLEANINGS.

## Leahy M'f'g Co.,

—UNDOUBTEDLY THE—

### LARGEST PLANT IN THE WEST,

Built exclusively for the manufacture of Apianarian Supplies. One and One-Half Acres Floor Space. We sell as Cheap as the Cheapest, and our goods are as Good as the Best. Parties will do well to write us for estimates on large orders. We will send you our catalogue for your name on a postal card. Address LEAHY MFG. CO., 7tfdb Higgsville, Mo.

Please mention this paper.

\$5.00 IN MAY, AND \$4.50 IN JUNE,

—WILL BUY—

### A Strong Full Colony of Pure Italian Bees

in Root's new Dovetailed or the old Simplicity hive, as you prefer. Each to contain a fine tested queen and plenty of bees and brood. Everything first-class. Pure Japanese Buckwheat, per bu., \$1; ¼ bu., 60c; ⅛ bu., 35c, bag included. Scotch Collie Pups, \$4 each. 6tfdb

N. A. KNAPP, Rochester, Lorain Co., O.

Please mention this paper.

## SECTIONS.

\$2.50 to \$3.50 per M. Bee-Hives and Fixtures cheap. NOVELTY CO., 6tfdb Rock Falls, Illinois.

EGGS! Brown Leghorn, White Leghorn, \$1.25. Black Minorca, Plymouth Rock, Pekin Duck, \$1.50. Light Brahma, Langshan, Game, \$2 per 13 eggs. Strictly pure-bred. Ship safely anywhere. Illustrated circular free. 1tfdb

GEER BROS., St. Marys, Mo.

(\*) In responding to this advertisement mention GLEANINGS.

FOR SALE, 10 colonies of Italian bees. Bar gain. 8-9d REV. R. W. LEWIS, Ft. Worth, Tex.

## FLORIDA NEWSPAPERS FREE

We will send the "South Florida Home" six weeks on trial for 10 cents and insert your name in our "Mailing List" which will bring you hundreds of sample copies of Florida newspapers, maps, circulars, etc., and if you want to visit or locate in Florida, you can decide where to go and how to get there. Address HOME, St. Petersburg, Fla.

(\*) In responding to this advertisement mention GLEANINGS.

## PATENT WIRED COMB FOUNDATION

HAS NO SAG IN BROOD-FRAMES.

## THIN FLAT - BOTTOM FOUNDATION

Has No Fish-bone in Surplus Honey.

Being the cleanest is usually worked the quickest of any Foundation made.

J. VAN DEUSEN & SONS,

Sole Manufacturers, 5tfdb Sprout Brook, Montgomery Co., N. Y.

(\*) In responding to this advertisement mention GLEANINGS.



## Kind + Friends.

I shall have nice untested Italian queens ready to mail by April 15; \$1.00 each. After April, 75 cents. Situated as I am, out on the prairie, my breeding-yards are kept at a safe distance. Ten per cent discount on 5 or more lbs. of bees after April 15. See advertisement in another place.

JENNIE ATCHLEY, Farmersville, Texas.

Please mention this paper.

## FOR SALE!

50 colonies of Italian and hybrid bees, by the pound or colony. For particulars address

C. A. KEELER, Carlinville, Ill.

8-9-10d

Please mention GLEANINGS.

## CARNIOLANS

Are the gentlest, most industrious, and hardiest bees known. Our Carniolans show no yellow bands. *Pure Carniolans do not.* We have a fine stock of tested queens for early orders. Descriptive price list free; send for it. F. A. LOCKHART & CO., 7-9d Lake George, Warren Co., N. Y.

Please mention this paper.

## THE RECORD BROKEN,

And the race is won by the Albinos, which outstripped even the Italians in gentleness, beauty, honey-gathering, and the prolificness of queens. This race of bees was brought about by the reproduction of an Italian sport, and greatest care has been taken to get them pure, and the result is a race of bees that ranks first in the bee world. Try one of these queens. Descriptive catalogue free. 8tfdb

A. L. KILDOW, SHEFFIELD, ILL.

(\*) In responding to this advertisement mention GLEANINGS.

## NEW FACTORY.

No. 1 Sections, \$3.50; No. 2, \$2.75. Fine Comb Foundation a specialty.

M. S. ROOP, 520 East Broadway, 6-17db Council Bluffs, Ia.

(\*) In responding to this advertisement mention GLEANINGS.

## BEESWAX

FOR SALE.—Crude and refined. We have constantly in stock large quantities of Beeswax, and supply the prominent manufacturers of comb foundation throughout the country. We guarantee every pound of Beeswax purchased from us absolutely pure. Write for our prices, stating quantity wanted.

ECKERMANN & WILL,

Bleachers, Refiners, and Importers of Beeswax,

5-16db

Syracuse, N. Y.

(\*) In responding to this advertisement mention GLEANINGS.

FOR SALE. 50 colonies of bees in new hives, Simplicity frames, at \$5.00 per colony. One-half cash, balance on time to suit the purchaser, with good security. 8-9d

Thos. GEDYE, Kangley, LaSalle Co., Ill.

## The Greatest Invention of the Age!

**BEEES MADE TO LIVE THEMSELVES.**

Full particulars free. Address

5-tfd

**H. ALLEY, Wenham, Mass.**

In responding to this advertisement mention GLEANINGS.



"I tell you what, Jones, Levering Bros. sell the best goods and at the lowest prices of any one I've struck yet."

**The LARGEST and  
BEST EQUIPPED  
BEE-HIVE FACTORY  
IN THE WEST.**

**THE NEW DOVETAILED HIVE A SPECIALTY.**

Every thing used by practical bee-keepers by wholesale and retail. Send for our '91 illustrated price list and save money. Address 4-15db

**LEVERING BROS., Wiota, Cass Co., Ia.**

In responding to this advertisement mention GLEANINGS.

**PACIFIC-COAST**

## Fanciers' Monthly.

Have you seen it?

**FOWLS, DOGS, PIGEONS,  
PETS, ORCHARD, HOME:**

It is devoted solely to such subjects. It is beautifully illustrated, is

**BRIGHT, PRACTICAL, HANDSOME,  
AND MONEY-MAKING.**

Not an ordinary poultry paper. Send 10 cts. for a sample copy, or \$1.00 for a full year; and if you don't say it is worth a good deal MORE than that we will refund your money. **TRY IT!**

Address:

7-9d

**THE FANCIERS' MONTHLY,  
SAN JOSE, CAL.**

Please mention this paper.

2tfdb

## SAVE FREIGHT

By buying your supplies near home. Catalogue for your name on a postal card. Address

4-10db

**J. W. ROUSE & CO., Mexico, Mo.**

Please mention this paper.

**1891. NEW BEE-HIVE FACTORY. 1891.**

Root's Dovetailed Hive a specialty. Price List free. Save your freight, and order early of

1tfdb

**GEO. W. COOK,**

**Spring Hill, Johnson Co., Kan.**

Please mention this paper.

## Syracuse, New York,

IS A DEPOT FOR THE EAST FOR ALL OF A. I.

ROOT'S APIARIAN SUPPLIES.

**FOUNDATION IS Our Own Make.**

Don't buy foundation of us, for it would please you.

**F. A. SALISBURY.**

Our Foundation is kept for sale by

**HENRY ALLEY, Wenham, Mass.**

In writing to advertisers please mention this paper. 4tfdb

## NEW AUTOMATIC ZINC PERFORATOR.

I am now able to supply zinc with the round-end perforations in 16 styles of opposite and alternate perforating. The new machine makes any size of sheet, with a border of any width from 2x5 inches up to 24x44. The work done has

**NEVER BEEN EQUALED,**

is uniform, exact, and perfectly reliable. Prices very low. Send stamp for samples. Address

**DR. G. L. TINKER, New Philadelphia, O.**

5tfdb

Please mention this paper.

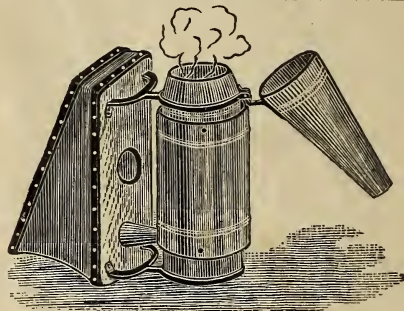
**COMB FOUNDATION**

## ADVANCED

3 cts. a lb., Wholesale and Retail,

**AFTER THIS DATE, APRIL 15,**

By Chas. Dadant & Son, Hamilton, Ill.,  
A. I. Root, Medina, Ohio.



Smokers, Foundation, and all kinds of bee-keepers' supplies furnished at lowest cash price. If you want the best Smoker in the market get one of the Quimby old reliable—made the strongest; and although the first cost is more than that of any other made, the Jumbo is the boss of all. It has been used constantly in yards for 8 years, and still it goes. Send and get price list of Smokers, Foundation, Sections, and every thing used in the apiary. Dealers should send for dealer's list on smokers.

4-14db

W. E. CLARK, ORISKANY, N. Y.

In responding to this advertisement mention GLEANINGS.

### SUPPLIES.

Standard goods, best shipping-point, reasonable price. 30-page catalogue free.

6-18db

WALTER S. POWDER, 175 E. Walnut St.,  
Indianapolis, Ind.

## \*THE CANADIAN\*

**Bee Journal Poultry Journal**

Edited by D. A. Jones.

Edited by W. C. G. Peter.

**75c. Per Year.**

**75c. Per Year.**

These are published separately, alternate weeks, and are edited by live practical men, and contributed to by the best writers. Both Journals are interesting, and are alike valuable to the expert and amateur. Sample copies free. Both Journals one year to one address \$1. Until June 1st we will send either Journal on trial trip for 6 months for 25 cts.

**The D. A. Jones Co., Ltd., Beeton, Ont.**

In responding to this advertisement mention GLEANINGS.





30 Quarto pages—50 cents a year.

**A**N Elegant Monthly for the **FAMILY** and **FIRESIDE**. Printed in the highest style of the art, and embellished with magnificent Engravings. Sample **FREE**. Agents Wanted.

**THOMAS G. NEWMAN AND SON**  
PUBLISHERS

246 East Madison St., - CHICAGO, ILL.

In responding to this advertisement mention GLEANINGS.

**MUSICAL INSTRUMENTS**  
**MURRAY & HEISS**  
CLEVELAND OHIO.  
SEND FOR CATALOGUE.

In responding to this advertisement mention GLEANINGS.

## Bee-Keepers' Supplies.

Hives, Honey-Cases, Sections, and Frames. We are the only concern in Southern California who make a

**SPECIALTY OF BEE-KEEPERS' MATERIAL**

Agents for the white basswood 1-lb. sections. Send for catalogue and price list.

1-12db **OCEANSIDE MILL CO.,**  
Oceanside, Cal.

In responding to this advertisement mention GLEANINGS.

**1891** Early Italian queens from bees bred for business. Each \$1.00; six \$4.50. Order now, pay when queen arrives.  
7tfdb W. H. LAWS, Lavaca, Ark.

## STOP! THINK! ACT!

Griffith's Italian queens will give you strong colonies, plenty of honey, and nice bees. 7-12db

Untested queens in May, \$1.00.

Tested " in June, July, and Aug., 75c.

Tested " in May, \$1.25.

Tested " in June, July, Aug., & Sept., \$1.00.

All queens reared from best imported and choice home mothers. Safe arrival guaranteed. Address all orders to **B. C. GRIFFITH**, Griffith, N. C. Postoffice order on Charlotte, or reg. let. to Griffith.

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## ATTENTION, CALIFORNIANS!

I have for sale 16000 1-lb. V-groove one-piece white basswood sections, 1 1/4 wide, made by A. I. Root. Price \$5.00 per M., put on cars at King City, Monterey Co., Cal. For 5000 or more, write for special prices to **C. K. ERCANBRACK, JUN.,**

4tfdb Lonoak, Monterey Co., Cal.

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**J. FORNCROOK & CO.,**

MANUFACTURERS OF THE

**"BOSS" ONE-PIECE SECTIONS.**



Will furnish you the coming season, one-piece sections, sandpapered on both sides, as cheap as the cheapest, and better than the best. Write for prices. Watertown, Wis., Mar. 1, 1891 6-7-9-11d

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## LOOK HERE, FRIENDS.

If you want Black or Hybrid Bees from March 15 to May 15, at \$1.00 per pound; Hybrid Queens, 50c. Black, 25c. as long as I have them, send to me. I guarantee safe arrival and satisfaction. Have shipped bees successfully for 10 years to the northern States and Canada. 6-9db

**MRS. JENNIE ATCHLEY,**  
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## PURE :: ITALIAN :: QUEENS.

TESTED, \$1.50.

UNTESTED, \$1.00.

IMPORTED  
MOTHER.

**MISSSES S. & M. BARNES, PIKETON, OHIO.**  
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## IMPORTED ITALIAN QUEENS.

**W. C. FRAZIER, ATLANTIC, IOWA.**

7-17db

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## MUTH'S Honey - Extractor.

Square Glass Honey-Jars,  
Tin Buckets, Bee-Hives  
Honey-Sections, &c., &c.  
Perfection Cold-Blast Smokers.

APPLY TO

**CHAS. F. MUTH & SON, Cincinnati, O.**

P. S.—Send 10-c. stamp for "Practical Hints to Bee-keepers."  
Please mention this paper.

**F**OUNDATION & SECTIONS are my specialties. No. 1 V-groove Sections at \$3.00 per 1000. Special Prices to dealers. Send for free price list of every thing needed in the apiary. **M. H. HUNT,**

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## EARLY QUEENS ALL ITALIANS.

1 Untested Queen, April, \$1.00; May, \$1.00.

3 " Queens, " 2.75; " 2.50.

1 Tested Queen, " 2.00; " 2.00.

3 " Queens, " 5.00; " 4.00.

Very best Select Tested for breeding, \$3.00.

2-frame Nuclei, with any queen, \$1.50 extra.

Safe arrival guaranteed. 7-8-9d

**W. J. ELLISON, Catchall, Sumter Co., S. C.**

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## TAKE NOTICE.

### Our New Factory is Now Open

To receive orders for **Bee-Hives, Frames** of all kinds, **Shipping - Crates, Sections, Honey-Cans, Comb Foundation**, and **Smokers**. Write for price list to

**GREGORY BROS. & SON,**

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## LEATHER-COLORED

PRICE LIST FREE ON APPLICATION.

**A. E. MANUM, - - BRISTOL, VT.**

## ITALIAN QUEENS.

Please mention this paper.

7-14db

# OUR NEW OUTSIDE WINTER - CASE FOR DOVETAILED HIVES

Is now ready. It is **LIGHT, STRONGLY MADE**, with **SOLID CORNERS**, gable roof, and is **PERFECT**. It is especially designed for using on the regular **Dovetailed Hive**, and we guarantee that bees will winter safer with it than any other method.—Besides it is **VERY CHEAP**, and no trouble to use.

We have also just constructed a **THIN-WALLED HIVE**, same size inside as the 8-frame Dovetailed hive, and taking same inside furniture. This, in combination with the Winter-case, is the best hive for both summer and winter we have ever seen.—Full description and illustrations will appear in May number of **AMERICAN BEE-KEEPER**, and description and prices will be sent on application. It is the **CHEAPEST** hive made, and with the winter-case is the cheapest winter hive. Send for prices. Address

**The W. T. Falconer Mfg. Co.**  
**JAMESTOWN, N. Y.**

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1878 **DADANT'S COMB FOUNDATION.** 1891

Half a Million Pounds Sold in Thirteen Years. Over \$200,000 in Value.

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It is the best, and guaranteed every inch equal to sample. All dealers who have tried it have increased their trade every year.

**SAMPLES, CATALOGUE, FREE TO ALL. SEND YOUR ADDRESS**

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Those who wish a book in which they will find, without difficulty, whatever information beginners desire, should send for this work. Its arrangement is such that any subject and all its references can be found very readily, by a system of indexing numbers. It is the most complete treatise in the English language.

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## HANDLING BEES (Price 8 cts.),

is a chapter of the Langstroth revised, and contains instructions to beginners on the handling and taming of bees.

Bee-veils of Best Imported Material. Samples FREE. Smokers, Honey Sections, Extractors, Tin Pails for Honey, etc. Instructions to Beginners with Circular, Free.

**CHAS. DADANT & SON, Hamilton, Hancock Co., Ill.**

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